NETGEAR®

N300 WiFi Router

Model WNR2000v5

User Manual

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350 East Plumeria Drive
San Jose, CA 95134
USA

Support

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Hardware Setup

1

This chapter covers the following topics:

- *Unpack Your Router*
- *Front Panel*
- *Rear Panel*
- *Position Your Router*
- *Cable Your Router*

For more information about the topics covered in this manual, visit the support website at *http://support.netgear.com.*

Unpack Your Router

Your package contains the following items.

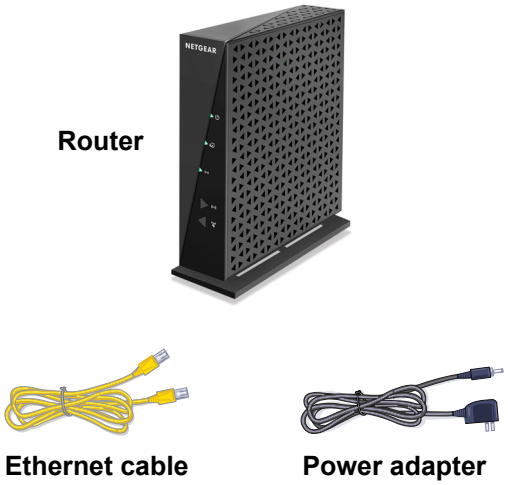


Figure 1. Package contents

Front Panel

The router has status LEDs and buttons on the front.

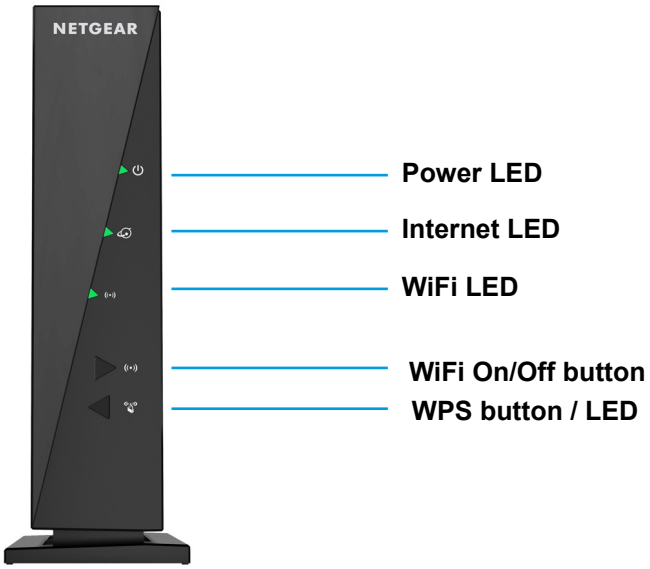


Figure 2. Router front view

You can use the LEDs to verify status and connections. The following table lists and describes each LED and button on the front panel of the router.

Table 1. LED and button descriptions

LED	Description
WiFi On/Off button with LED	Pressing this button for two seconds turns the WiFi radio in the router on and off. If this LED is lit, the WiFi radio is on. If this LED is off, the WiFi radio is turned off and you cannot use WiFi to connect to the router.
WPS button with LED	This button lets you use WPS to join the WiFi network without typing the WiFi password. The WPS LED blinks during this process and then lights solid.
Power	• **Solid green**. The power is on, and the router is ready. • **Solid amber**. When you apply power to the router, the Power LED lights and turns amber within a few seconds. This indicates that the self-test is running. • **Blinking green**. A firmware update is in progress. • **Off**. Power is not supplied to the router.
Internet	• **Solid green**. • **Solid amber**. • **Off**.
WiFi	• **Solid green**. The WiFi radio is operating. • **Off**. The wireless radio is off.

Rear Panel

The rear panel has the connections and button shown the following figure.

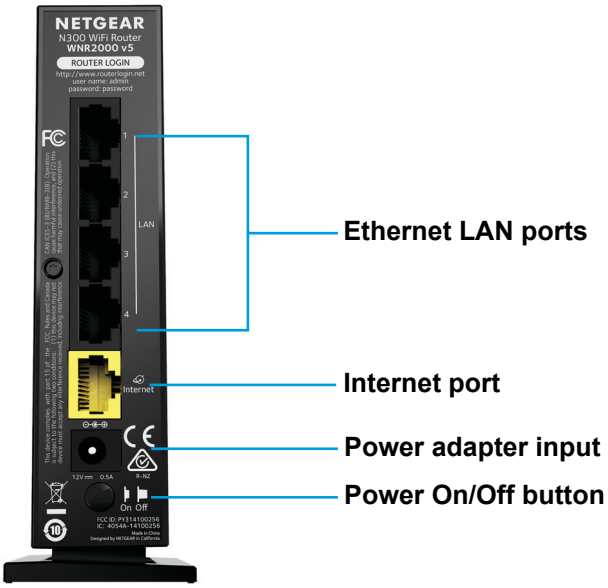


Figure 3. Router rear panel

Position Your Router

The router lets you access your network anywhere within the operating range of your wireless network. However, the operating distance or range of your wireless connection can vary significantly depending on the physical placement of your router. For example, the thickness and number of walls the wireless signal passes through can limit the range.

Additionally, other wireless access points in and around your home might affect your router's signal. Wireless access points are routers, repeaters, WiFi range extenders, and any other device that emits a wireless signal for network access.

Position your router according to the following guidelines:

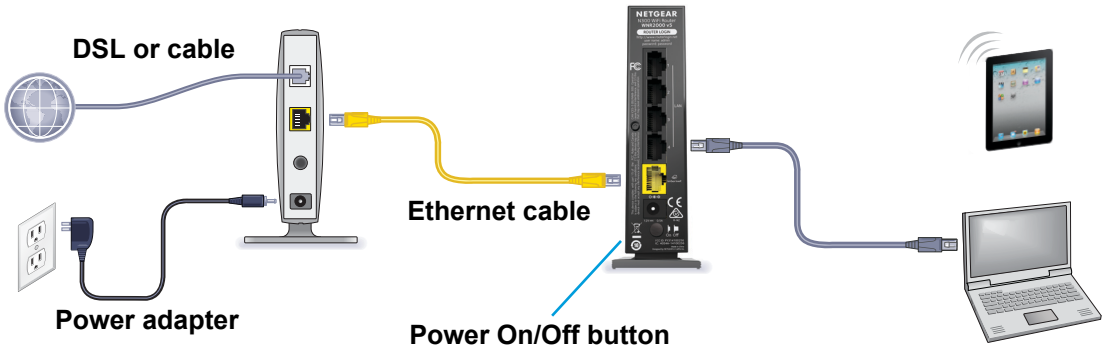
- Place your router near the center of the area where your computers and other devices operate and within line of sight to your wireless devices.
- Make sure that the router is within reach of an AC power outlet and near Ethernet cables for wired computers.
- Place the router in an elevated location, minimizing the number walls and ceilings between the router and your other devices.
- Place the router away from electrical devices such as these:
  - Ceiling fans
  - Home security systems

  - Microwaves
  - Computers
  - Base of a cordless phone
  - 2.4 GHz cordless phone
- Place the router away from large metal surfaces, large glass surfaces, insulated walls, and items such as these:
  - Solid metal doors
  - Aluminum studs
  - Fish tanks
  - Mirrors
  - Brick
  - Concrete

Cable Your Router

➢ **To cable your router:**

1. Connect the power adapter provided in the package to the router and plug the power adapter in to an electrical outlet.



2. Press the **Power On/Off** button on the rear panel of the router.

   The Power LED lights green.

You can log in to the router to view or change its settings.

Connect to the Network and Access the Router

2

This chapter contains the following sections:

- *Connect to the Network*
- *Types of Logins*
- *Log In to the Router*

Connect to the Network

You can connect to the router's network through a wired or WiFi connection. If you set up your computer to use a static IP address, change the settings so that it uses Dynamic Host Configuration Protocol (DHCP).

Wired Connection

You can connect your computer to the router using an Ethernet cable and join the router's local area network (LAN).

➢ **To connect your computer to the router with an Ethernet cable:**

1. Make sure that the router has power (its Power LED is lit).
2. Connect an Ethernet cable to an Ethernet port on your computer.
3. Connect the other end of the Ethernet cable to one of the numbered Ethernet ports.

   Your computer connects to the local area network (LAN). A message might display on your computer screen to notify you that an Ethernet cable is connected.

WiFi Connection

You can connect to the router's WiFi network with Wi-Fi Protected Setup (WPS) or you can find and select the WiFi network.

➢ **To use WPS to connect to the WiFi network:**

1. Make sure that the router has power (its Power LED is lit).
2. Check the WPS instructions for your computer or wireless device.
3. Press the **WPS** button on the router.
4. Within two minutes, on your computer or WiFi device, press its **WPS** button or follow its instructions for WPS connections.

   Your computer or wireless device connects to the WiFi network.

➢ **To find and select the WiFi network:**

1. Make sure that the router has power (its Power LED is lit).
2. On your computer or wireless device, find and select the WiFi network.

   The WiFi network name is on a label on the bottom of the router.
3. Join the WiFi network and enter the WiFi password.

   The password is on a label on the bottom of the router.

   Your wireless device connects to the WiFi network.

Types of Logins

Separate types of logins have different purposes. It is important that you understand the difference so that you know which login to use when.

Several types of logins are associated with the router:

- **Internet provider login**. The login that your Internet provider gave you logs you in to your Internet service. Your Internet provider gave you this login information in a letter or some other way. If you cannot find this login information, contact your Internet provider.
- **WiFi network key or password**. Your router is preset with a unique wireless network name (SSID) and password for wireless access. This information is on a router label.
- **Modem router login**.This logs you in to the router interface from a web browser as admin.

Log In to the Router

When you connect to the network (either with WiFi or with an Ethernet cable), you can use a web browser to access the router to view or change its settings. The first time you access the router, NETGEAR genie automatically checks to see if your router can connect to your Internet service.

➢ **To log in to the router:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

Specify Initial Settings

3

This chapter contains the following sections:

- *Use the Setup Wizard*
- *Manually Set Up the Internet Connection*
- *Specify IPv6 Internet Connections*
- *Change the MTU Size*

Use the Setup Wizard

You can use the Setup Wizard to detect your Internet settings and automatically set up your router. The Setup Wizard is not the same as the genie screens that display the first time you connect to your router to set it up.

➢ **To use the Setup Wizard:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup Wizard**.

Setup Wizard
The Smart Setup Wizard can detect the type of Internet connection that you have.
Do you want the Smart Setup Wizard to try and detect the connection type now?
Yes
No. I want to configure the router myself.
Next

5. Select the **Yes** radio button.

   If you select **No**, you are taken to the Internet Setup screen (see *Manually Set Up the Internet Connection* on page 16).
6. Click the **Next** button.

   The Setup Wizard searches your Internet connection for servers and protocols to determine your ISP configuration.

   When you connect to the Internet, the Setup Wizard Congratulations screen displays.

Manually Set Up the Internet Connection

You can view or change the router's Internet connection settings.

Specify an Internet Connection Without a Login

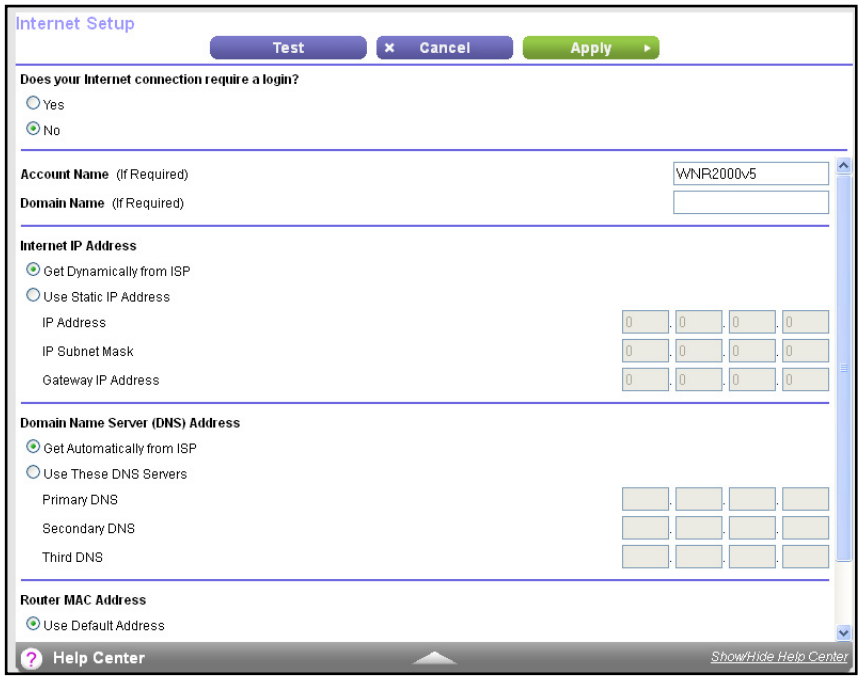
➢ **To specify the Internet connection settings:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **Internet**.



5. For the Does your Internet connection require a login setting, leave the **No** radio button selected.
6. If your Internet connection requires an account name or host name, type it in the **Account Name (If Required)** field.

7. If your Internet connection requires a domain name, type it in the **Domain Name (If Required)** field.

   For the other sections in this screen, the default settings usually work, but you can change them.

8. Select an Internet IP Address radio buttons
   - **Get Dynamically from ISP**. Your ISP uses DHCP to assign your IP address. Your ISP automatically assigns these addresses.
   - **Use Static IP Address**. Enter the IP address, IP subnet mask, and gateway IP address that your ISP assigned. The gateway is the ISP router to which your router connects.
9. Select a Domain Name Server (DNS) Address radio button:
   - **Get Automatically from ISP**. Your ISP uses DHCP to assign your DNS servers. Your ISP automatically assigns this address.
   - **Use These DNS Servers**. If you know that your ISP requires specific servers, select this option. Enter the IP address of your ISP's primary DNS server. If a secondary DNS server address is available, enter it also.
10. Select a Router MAC Address radio button:
    - **Use Default Address**. Use the default MAC address.
    - **Use Computer MAC Address**. The router captures and uses the MAC address of the computer that you are now using. You must use the one computer that the ISP allows.
    - **Use This MAC Address**. Enter the MAC address that you want to use.
11. Click the **Apply** button.

    Your settings are saved.

12. Click the **Test** button to test your Internet connection.

    If the NETGEAR website does not display within one minute, see *Chapter 9, Troubleshooting*.

Specify an Internet Connection That Uses a Login

➢ **To view or change the basic Internet setup:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

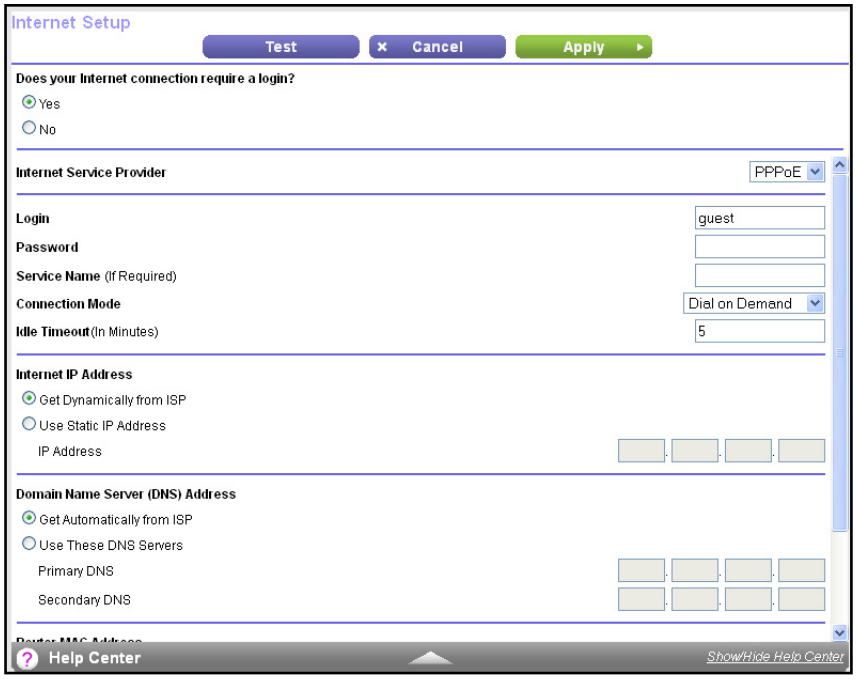
   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **Internet**.



5. In the Does your Internet connection require a login section of the screen, select the **Yes** radio button.

   The screen adjusts.

6. In the **Internet Service Provider** list, select the encapsulation method: **PPPoE**, **PPPoA**, or **L2TP**.
7. In the **Login** field, enter the login name your Internet provider gave you.

   This login name is often an email address.

8. In the **Password** field, type the password that you use to log in to your Internet service.
9. If your ISP requires a service name, type it in the **Service Name (if Required)** field.
10. In the **Connection Mode** list, select **Always On**, **Dial on Demand**, or **Manually Connect**.
11. To change the number of minutes until the Internet login times, out, in the **Idle Timeout (In minutes)** field, type the number of minutes.

    This is how long the router keeps the Internet connection active when no one on the network is using the Internet connection. A value of 0 (zero) means never log out.

12. Select an Internet IP Address radio button:
    - **Get Dynamically from ISP**. Your ISP uses DHCP to assign your IP address. Your ISP automatically assigns these addresses.
    - **Use Static IP Address**. Enter the IP address, IP subnet mask, and gateway IP address that your ISP assigned. The gateway is the ISP router to which your router connects.
13. Select a Domain Name Server (DNS) Address radio button:

- **Get Automatically from ISP**. Your ISP uses DHCP to assign your DNS servers. Your ISP automatically assigns this address.
- **Use These DNS Servers**. If you know that your ISP requires specific servers, select this option. Enter the IP address of your ISP's primary DNS server. If a secondary DNS server address is available, enter it also.

14. Select a Router MAC Address radio button:
    - **Use Default Address**. Use the default MAC address.
    - **Use Computer MAC Address**. The router captures and uses the MAC address of the computer that you are now using. You must use the one computer that the ISP allows.
    - **Use This MAC Address**. Enter the MAC address that you want to use.
15. Click the **Apply** button.

    Your settings are saved.
16. Click the **Test** button to test your Internet connection.

    If the NETGEAR website does not display within one minute, see *Chapter 9, Troubleshooting*.

Specify IPv6 Internet Connections

You can set up an IPv6 Internet connection if genie does not detect it automatically.

➢ **To set up an IPv6 Internet connection:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > IPv6**.

   The Basic Settings screen displays.
5. In the **Internet Connection Type** list, select the IPv6 connection type:
   - If your ISP did not provide details, select **IPv6 Tunnel**.
   - If you are not sure, select **Auto Detect** so that the router detects the IPv6 type that is in use.
   - If your Internet connection does not use PPPoe or DHCP, or not fixed, but is IPv6, select **Auto Config**.

Your Internet service provider (ISP) can provide this information. For more information about IPv6 Internet connection, see the following sections.

- *Use Auto Detect for an IPv6 Internet Connection* on page 20
- *Use Auto Config for an IPv6 Internet Connection* on page 22
- *Set Up a 6to4 Tunnel IPv6 Internet Connection* on page 23
- *Set Up a Fixed IPv6 Internet Connection* on page 25
- *Set Up a DHCP IPv6 Internet Connection* on page 27
- *Set Up a PPPoE IPv6 Internet Connection* on page 28

6. Click the **Apply** button.

   Your changes are saved.

Requirements for Entering IPv6 Addresses

IPv6 addresses are denoted by eight groups of hexadecimal quartets that are separated by colons. You can reduce any four-digit group of zeros within an IPv6 address to a single zero or omit it. The following errors invalidate an IPv6 address:

- More than eight groups of hexadecimal quartets
- More than four hexadecimal characters in a quartet
- More than two colons in a row

Use Auto Detect for an IPv6 Internet Connection

➢ **To set up an IPv6 Internet connection through auto detection:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

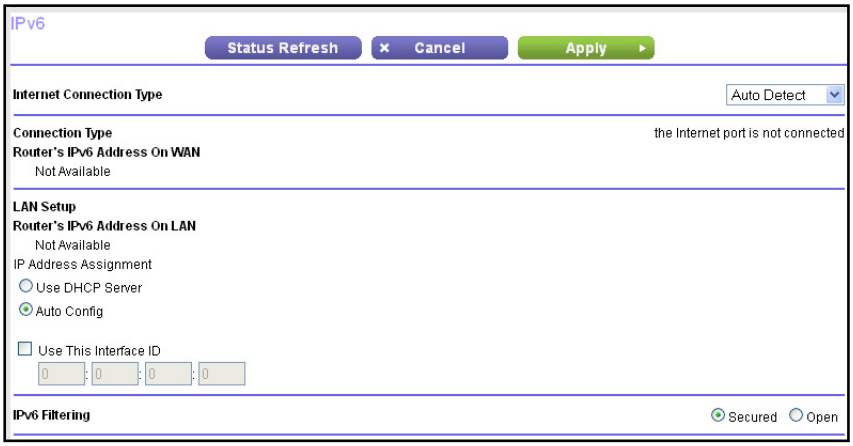
   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.
5. In the **Internet Connection Type** list, select **Auto Detect**.

The screen adjusts:



The router automatically detects the information in the following fields:

- **Connection Type**. This field indicates the connection type that is detected.
- **Router's IPv6 Address on WAN**. This field shows the IPv6 address that is acquired for the router's WAN (or Internet) interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
- **Router's IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. Select an IP Address Assignment radio button:
   - **Use DHCP Server**. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.
   - **Auto Config**. This is the default setting.

   This setting specifies how the router assigns IPv6 addresses to the devices on your home network (the LAN).
7. (Optional) Select the **Use This Interface ID** check box and specify the interface ID to be used for the IPv6 address of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.
8. Click the **Apply** button.

   Your settings are saved.

Use Auto Config for an IPv6 Internet Connection

➢ **To set up an IPv6 Internet connection through auto configuration:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.
5. In the **Internet Connection Type** list, select **Auto Config**.

   The screen adjusts:

   The router automatically detects the information in the following fields:

   - **Router's IPv6 Address on WAN**. This field shows the IPv6 address that is acquired for the router's WAN (or Internet) interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
   - **Router's IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
6. (Optional) In the **DHCP User Class (If Required)** field, enter a host name.

Most people can leave this field blank, but if your ISP gave you a specific host name, enter it here.

7. (Optional) In the **DHCP Domain Name (If Required)** field, enter a domain name.

   You can type the domain name of your IPv6 ISP. Do not enter the domain name for the IPv4 ISP here. For example, if your ISP's mail server is mail.xxx.yyy.zzz, type xxx.yyy.zzz as the domain name. If your ISP provided a domain name, type it in this field. For example, Earthlink Cable might require a host name of home, and Comcast sometimes supplies a domain name.

8. Select an IP Address Assignment radio button:
   - **Use DHCP Server**. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.
   - **Auto Config**. This is the default setting.

   This setting specifies how the router assigns IPv6 addresses to the devices on your home network (the LAN).

9. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.

10. Click the **Apply** button.

    Your settings are saved.

Set Up a 6to4 Tunnel IPv6 Internet Connection

The remote relay router is the router to which your router creates a 6to4 tunnel. Make sure that the IPv4 Internet connection is working before you apply the 6to4 tunnel settings for the IPv6 connection.

➢ **To set up an IPv6 Internet connection by using a 6to4 tunnel:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.

5. In the **Internet Connection Type** list, select **6to4 Tunnel**.

   The screen adjusts:

   The router automatically detects the information in the Router's IPv6 Address on LAN field. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. Select a Remote 6to4 to Relay Router radio button:
   - **Auto**. Your router uses any remote relay router that is available on the Internet. This is the default setting.
   - **Static IP Address**. Enter the static IPv4 address of the remote relay router. Your IPv6 ISP usually provides this address.
7. Select an IP Address Assignment radio button:
   - **Use DHCP Server**. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.
   - **Auto Config**. This is the default setting.

   This setting specifies how the router assigns IPv6 addresses to the devices on your home network (the LAN).
8. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.
9. Click the **Apply** button.

   Your settings are saved.

Set Up a Pass Through IPv6 Internet Connection

In pass-through mode, the router works as a Layer 2 Ethernet switch with two ports (LAN and WAN Ethernet ports) for IPv6 packets. The router does not process any IPv6 header packets.

➢ **To set up a pass-through IPv6 Internet connection:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.
5. In the **Internet Connection Type** list, select **Pass Through**.

   The screen adjusts, but no additional fields display.
6. Click the **Apply** button.

   Your settings are saved.

Set Up a Fixed IPv6 Internet Connection

➢ **To set up a fixed IPv6 Internet connection:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

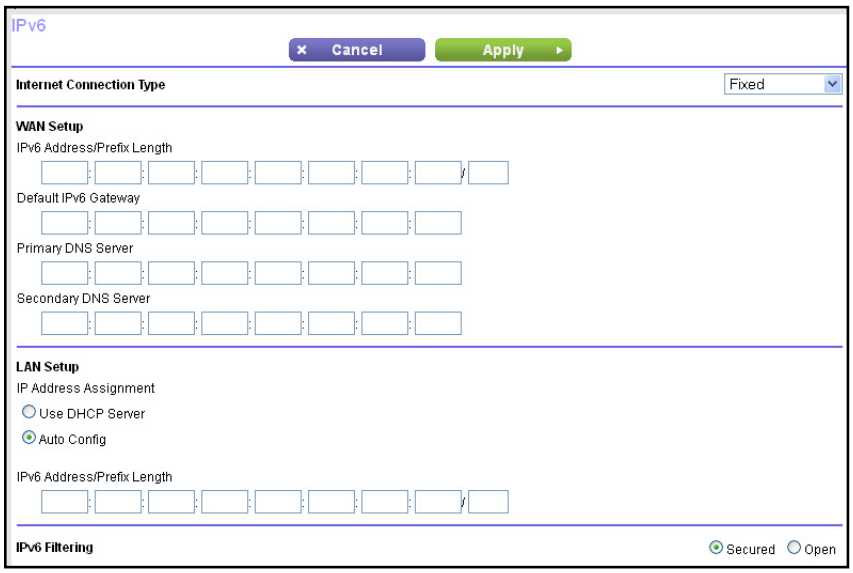
   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.
5. In the **Internet Connection Type** list, select **Fixed**.

The screen adjusts:



6. Configure the fixed IPv6 addresses for the WAN connection:
   - **IPv6 Address/Prefix Length**. The IPv6 address and prefix length of the router WAN interface.
   - **Default IPv6 Gateway**. The IPv6 address of the default IPv6 gateway for the router's WAN interface.
   - **Primary DNS Server**. The primary DNS server that resolves IPv6 domain name records for the router.
   - **Secondary DNS Server**. The secondary DNS server that resolves IPv6 domain name records for the router.

   Note: If you do not specify the DNS servers, the router uses the DNS servers that are configured for the IPv4 Internet connection on the Internet Setup screen. (See *Manually Set Up the Internet Connection* on page 16.)

7. Select an IP Address Assignment radio button:
   - **Use DHCP Server**. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.
   - **Auto Config**. This is the default setting.

   This setting specifies how the router assigns IPv6 addresses to the devices on your home network (the LAN).

8. In the **IPv6 Address/Prefix Length** fields, specify the static IPv6 address and prefix length of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.

9. Click the **Apply** button.

Your settings are saved.

Set Up a DHCP IPv6 Internet Connection

➢ **To set up an IPv6 Internet connection with a DHCP server:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

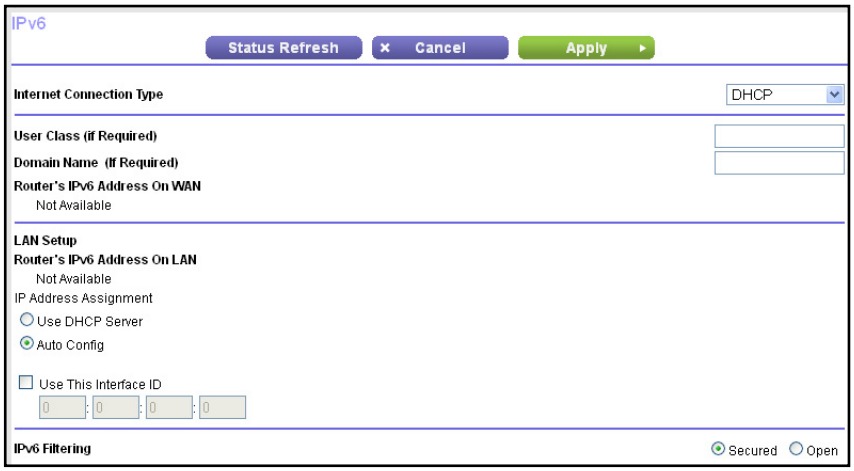
   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.
5. In the **Internet Connection Type** list, select **DHCP**.

   The screen adjusts:



   The router automatically detects the information in the following fields:

   - **Router’s IPv6 Address on WAN**. This field shows the IPv6 address that is acquired for the router’s WAN (or Internet) interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
   - **Router’s IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router’s LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. (Optional) In the **User Class (If Required)** field, enter a host name.

   Most people can leave this field blank, but if your ISP gave you a specific host name, enter it here.

7. (Optional) In the **Domain Name (If Required)** field, enter a domain name.

   You can type the domain name of your IPv6 ISP. Do not enter the domain name for the IPv4 ISP here. For example, if your ISP's mail server is mail.xxx.yyy.zzz, type xxx.yyy.zzz as the domain name. If your ISP provided a domain name, type it in this field. For example, Earthlink Cable might require a host name of home, and Comcast sometimes supplies a domain name.

8. Select an IP Address Assignment radio button:
   - **Use DHCP Server**. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.
   - **Auto Config**. This is the default setting.

   This setting specifies how the router assigns IPv6 addresses to the devices on your home network (the LAN).

9. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.

10. Click the **Apply** button.

    Your settings are saved.

Set Up a PPPoE IPv6 Internet Connection

➢ **To set up a PPPoE IPv6 Internet connection:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

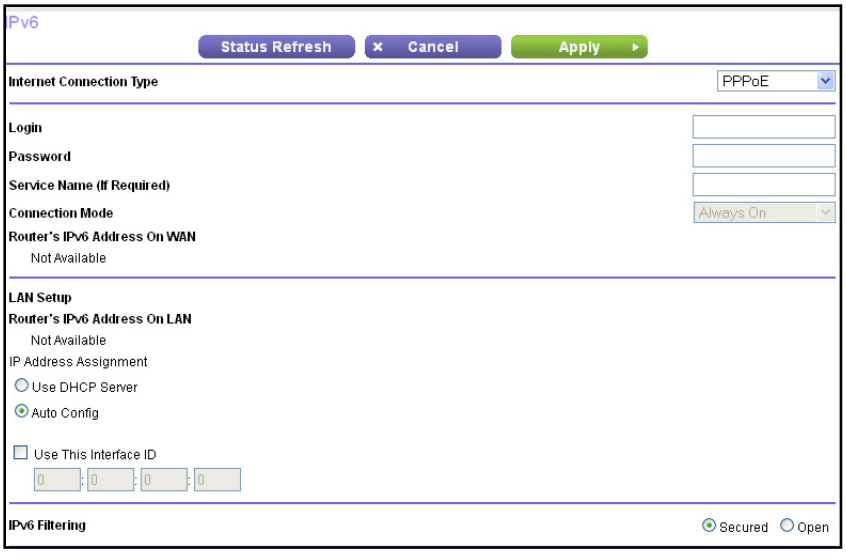
   The BASIC Home screen displays.

4. Select **ADVANCED > Advanced Setup > IPv6**.

   The IPv6 screen displays.

5. In the **Internet Connection Type** list, select **PPPoE**.

The screen adjusts:



The router automatically detects the information in the following fields:

- **Router's IPv6 Address on WAN**. This field shows the IPv6 address that is acquired for the router's WAN (or Internet) interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
- **Router's IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. In the **Login** field, enter the login information for the ISP connection.

   This is usually the name that you use in your email address. For example, if your main mail account is JerAB@ISP.com, you would type JerAB in this field. Some ISPs (like Mindspring, Earthlink, and T-DSL) require that you use your full email address when you log in. If your ISP requires your full email address, type it in this field.

7. In the **Password** field, enter the password for the ISP connection.
8. In the **Service Name** field, enter a service name.

   If your ISP did not provide a service name, leave this field blank.

   Note: The default setting of the **Connection Mode** list is **Always On** to provide a steady IPv6 connection. The router never terminates the connection. If the connection is terminated, for example, when the modem is turned off, the router attempts to reestablish the connection immediately after the PPPoE connection becomes available again.

9. Select an IP Address Assignment radio button:
   - **Use DHCP Server**. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.

- **Auto Config**. This is the default setting.

  This setting specifies how the router assigns IPv6 addresses to the devices on your home network (the LAN).

10. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

    If you do not specify an ID here, the router generates one automatically from its MAC address.

11. Click the **Apply** button.

    Your settings are saved.

Change the MTU Size

The maximum transmission unit (MTU) is the largest data packet a network device transmits. When one network device communicates across the Internet with another, the data packets travel through many devices along the way. If a device in the data path has a lower MTU setting than the other devices, the data packets must be split or "fragmented" to accommodate the device with the smallest MTU.

The best MTU setting for NETGEAR equipment is often the default value. In some situations, changing the value fixes one problem but causes another. Leave the MTU unchanged unless one of these situations occurs:

- You experience problems connecting to your ISP or other Internet service, and the technical support of either the ISP or NETGEAR recommends changing the MTU setting. These web-based applications might require an MTU change:
  - A secure website that does not open, or displays only part of a web page
  - Yahoo email
  - MSN portal
  - America Online's DSL service
- You use VPN and have severe performance problems.
- You used a program to optimize MTU for performance reasons and now you have connectivity or performance problems.

Note: An incorrect MTU setting can cause Internet communication problems. For example, you might not be able to access certain websites, frames within websites, secure login pages, or FTP or POP servers.

➢ **To change the MTU size:**

1. Launch a web browser from a computer or wireless device that is connected to the network.

2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

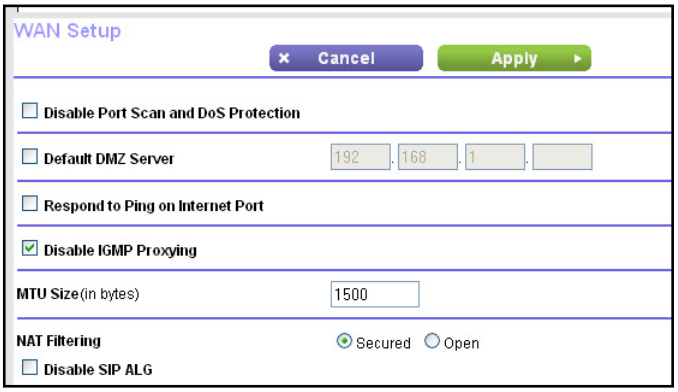
   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Setup > WAN Setup**.



5. In the **MTU Size** field, enter a value from 64 to 1500.
6. Click the **Apply** button.

   Your change is saved.

If you suspect an MTU problem, a common solution is to change the MTU to 1400. If you are willing to experiment, you can gradually reduce the MTU from the maximum value of 1500 until the problem goes away. The following table describes common MTU sizes and applications.

Table 2. Common MTU sizes

MTU	Application
1500	The largest Ethernet packet size. This setting is typical for connections that do not use PPPoE or VPN and is the default value for NETGEAR routers, adapters, and switches.
1492	Used in PPPoE environments.
1472	Maximum size to use for pinging. (Larger packets are fragmented.)
1468	Used in some DHCP environments.
1460	Usable by AOL if you do not have large email attachments, for example.
1436	Used in PPTP environments or with VPN.
1400	Maximum size for AOL DSL.
576	Typical value to connect to dial-up ISPs.

Optimize Performance

4

This chapter contains the following sections:

- *Prioritize Internet Traffic with Quality of Service*
- *Optimize Internet Gaming with Upstream QoS*
- *Optimize Internet Streaming with QoS*
- *Wi-Fi Multimedia Quality of Service*
- *Improve Network Connections with Universal Plug and Play*

Prioritize Internet Traffic with Quality of Service

You can use Quality of Service (QoS) to assign high priority to gaming and streaming video from the Internet.

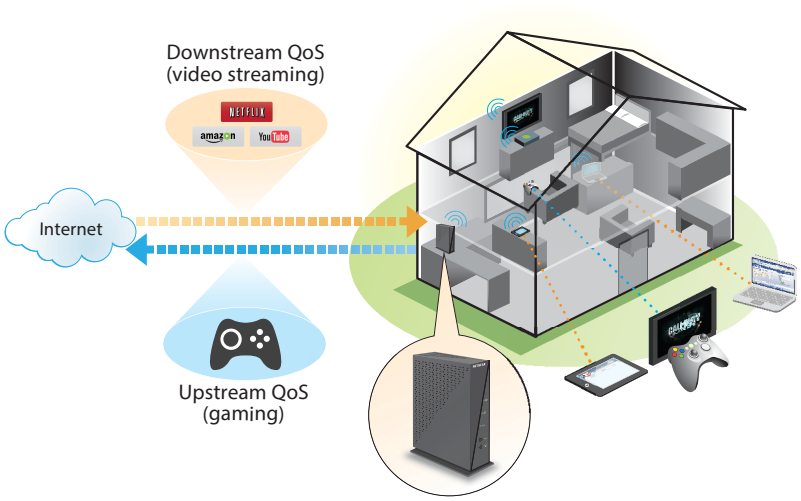


Figure 4. You can prioritize downstream traffic, upstream traffic, or both

Optimize Internet Gaming with Upstream QoS

Upstream Quality of Service (QoS) assigns high priority to Internet traffic from your Xbox gaming system.

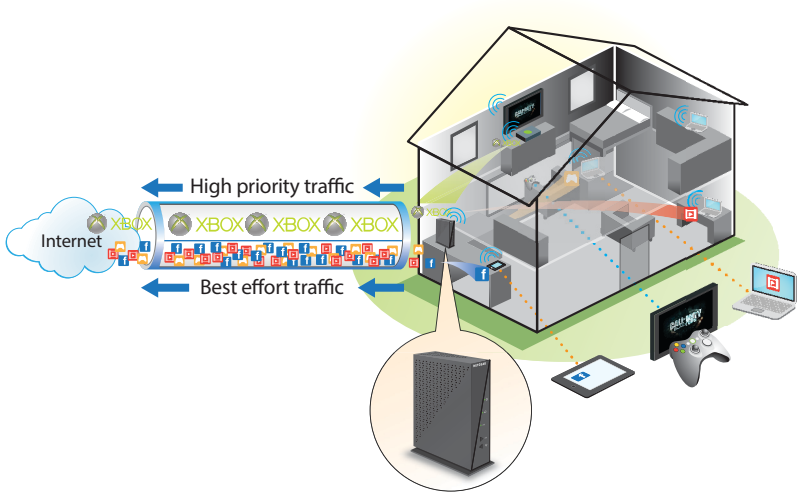


Figure 5. Upstream QoS assigns high priority to gaming traffic from your Xbox

NETGEAR recommends that only gamers enable the Upstream QoS feature. If you do not game and you turn on this feature, some applications might not perform as well as usual.

➢ **To enable upstream QoS:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > QoS Setup**.

5. Select the **Enable Upstream QoS (Optimized for Gaming)** check box.
6. Specify the maximum uplink bandwidth for your Internet connection:
   - If you know what your uplink bandwidth is, type it in the **Uplink bandwidth Maximum** field.
   - If you are not sure, click the **http://www.speedtest** link.

     Speedtest verifies the upstream speed of your Internet connection. The **Uplink bandwidth Maximum** field displays the result of the test.
7. Click the **Apply** button.

   The router assigns a high priority to Internet traffic from your gaming devices to the Internet.

Optimize Internet Streaming with QoS

You can use Quality of Service (QoS) to assign high priority to Internet streaming, applications, and services.

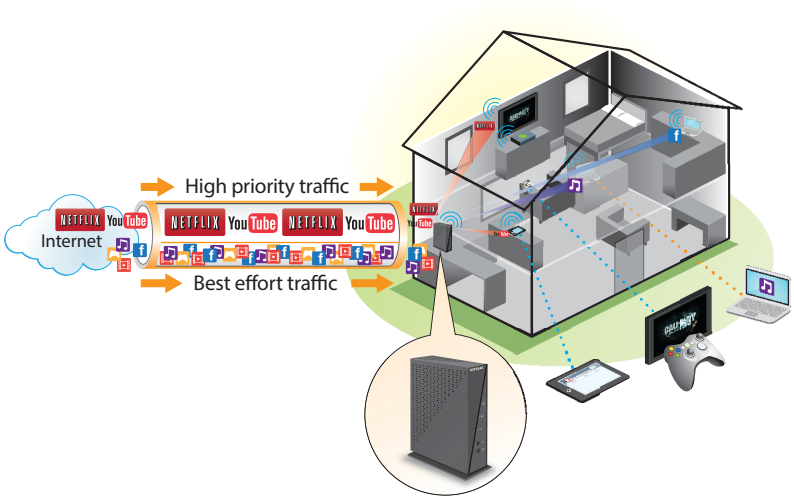


Figure 6. QoS can assign high priority to streaming from the Internet

NETGEAR recommends that you enable this feature only if you use streaming Internet. When QoS assigns a high priority to streaming video, it also assigns lower priority to the rest of your Internet traffic. That means other tasks like downloading content from the Internet take longer.

➢ **To enable QoS for Internet access:**

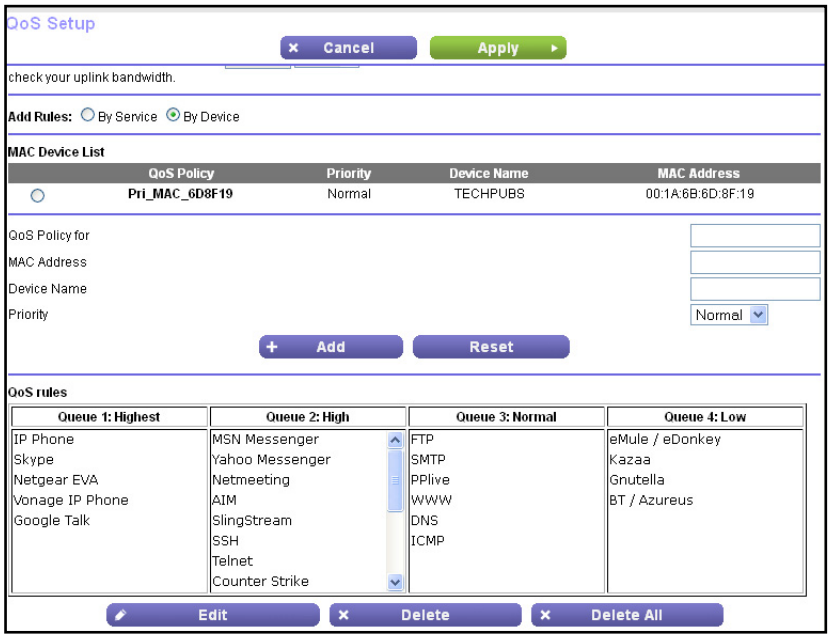
1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > QoS Setup**.
5. Select the **Turn Internet Access QoS On** check box.

The screen adjusts.



6. Click the **Apply** button.

   The router assigns a high priority to video streaming from the Internet traffic.

Add QoS Rules by Service

➢ **To add a QoS rule for a service:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **http://www.routerlogin.net** or **http://www.routerlogin.com**.

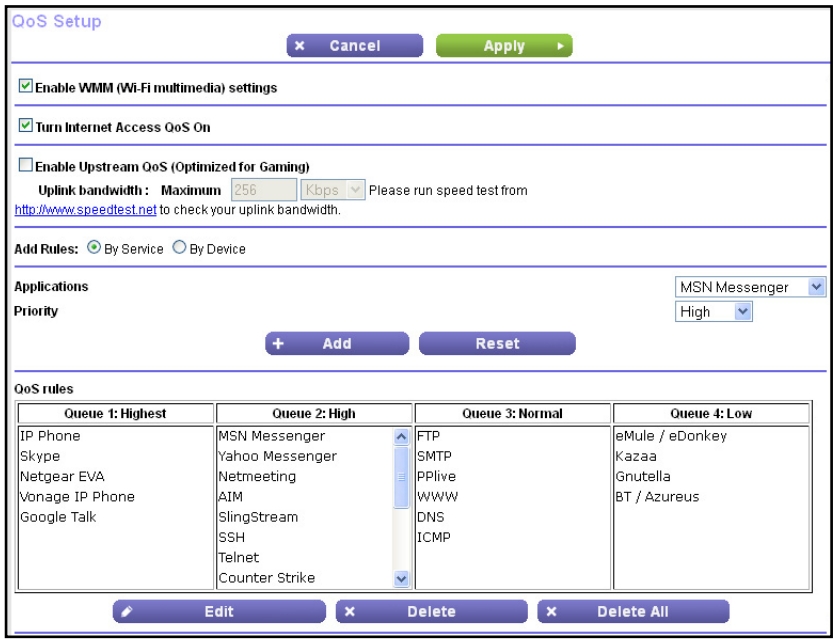
   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > QoS Setup**.

   The QoS Setup screen displays.
5. Select the **Turn Internet Access QoS On** check box.
6. Select the Add Rules **By Service** radio button.

The screen adjusts.



7. In the **Applications** list, select an application or service.
8. In the **Priority** list, select the priority for the rule.

   The priority selections correspond to the queues in the QoS rules table.
9. Click the **Add** button.

   The service displays in the QoS rules table.
10. Click the **Apply** button.

    Your settings are saved.

Add a QoS Rule by Device

➢ **To add a QoS rule for a device:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

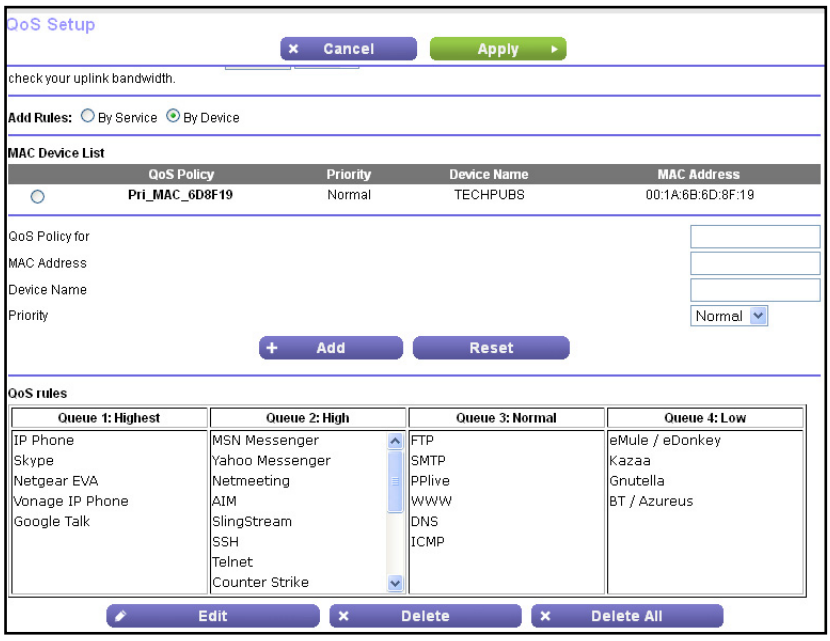
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > QoS Setup**.

The QoS Setup screen displays.

5. Select the **Turn Internet Access QoS On** check box.

   The screen adjusts.



6. Leave the Add Rules **By Device** radio button selected.

   Computers and devices that are connected to the network display in the MAC Device List. By default, each device has a normal priority.

7. Select or specify the device:
   - To select a device in the MAC Device List, select its radio button.
   - To specify a device that is not in the MAC Device List, complete the **QoS Policy for**, **MAC Address**, and **Device Name** fields and click the **Add** button.

   The device is listed in a queue in the QoS rules table with its default rule priority. The rule priority corresponds to the queues.

   Note: To specify a device rule's priority, edit the rule. For more information, see *Edit a QoS Rule* on page 38.

8. Click the **Apply** button.

   Your settings are saved.

Edit a QoS Rule

➢ **To edit a QoS rule:**

1. Launch a web browser from a computer or wireless device that is connected to the network.

2. In the address field of the web browser, enter **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

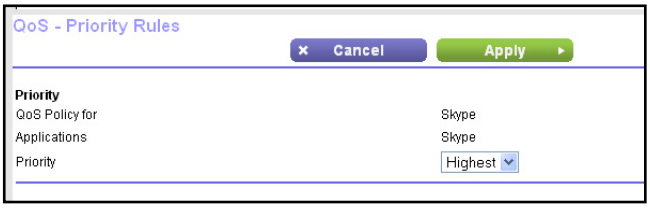
   The BASIC Home screen displays.

4. Select **ADVANCED > Setup > QoS Setup**.

   The QoS Setup screen displays.

5. Select the **By Service** radio button.
6. In the QoS rules table, click the application or service to select it.
7. Click the **Edit** button.

   The QoS - Priority Rules screen displays.



8. In the **Priority** list, select a priority level.
9. Click the **Apply** button.

   The rule's priority is updated in the QoS rules table on the QoS Setup screen.

Delete a QoS Rule

➢ **To delete a QoS rule:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Setup > QoS Setup**.

   The QoS Setup screen displays.

5. Select the **By Service** radio button.
6. In the QoS rules table, click the application or service to select it.
7. Click the **Delete** button.

   The rule is deleted.

Delete All QoS Rules

➢ **To delete all QoS rules:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **http://www.routerlogin.net** or **http://www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > QoS Setup**.

   The QoS Setup screen displays.
5. Select the **By Service** radio button.
6. Click the **Delete All** button.

   The ruled are deleted.

Wi-Fi Multimedia Quality of Service

Wi-Fi Multimedia Quality of Service (WMM QoS) prioritizes wireless voice and video traffic over the WiFi link. WMM QoS is automatically enabled for the router.

WMM QoS prioritizes wireless data packets from different applications based on four access categories: voice, video, best effort, and background. For an application to receive the benefits of WMM QoS, both it and the client running that application must have WMM enabled. Legacy applications that do not support WMM and applications that do not require QoS are assigned to the best effort category, which receives a lower priority than voice and video.

➢ **To disable WMM QoS:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **http://www.routerlogin.net** or **http://www.routerlogin.com**.

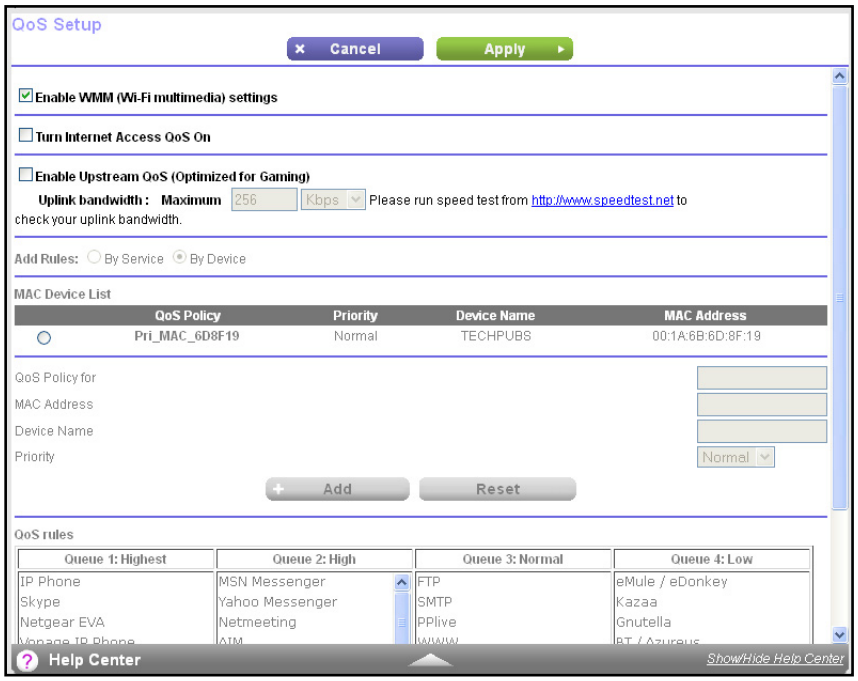
A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Setup > QoS Setup**.



5. Clear the **Enable WMM (Wi-Fi multimedia) settings** check box.
6. Click the **Apply** button.

   Your settings are saved.

Improve Network Connections with Universal Plug and Play

Universal Plug and Play (UPnP) helps devices, such as Internet appliances and computers, access the network and connect to other devices as needed. UPnP devices can automatically discover the services from other registered UPnP devices on the network.

If you use applications such as multiplayer gaming, peer-to-peer connections, or real-time communications such as instant messaging or remote assistance (a feature in Windows XP), enable UPnP.

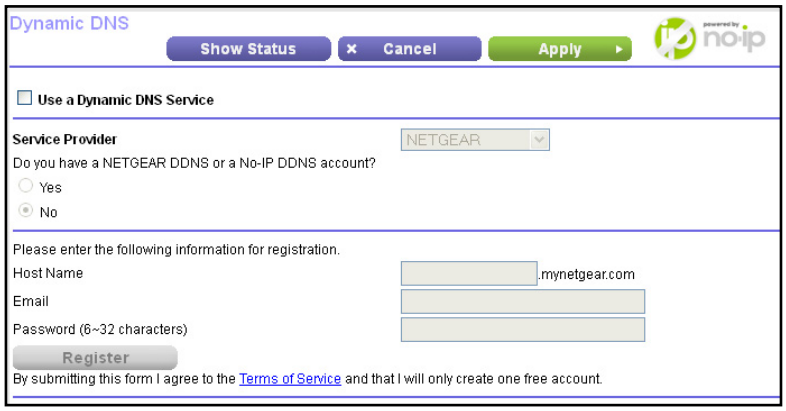
➢ **To enable Universal Plug and Play:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > UPnP**.



5. Select the **Turn UPnP On** check box.

   By default, this check box is selected. If the **Turn UPnP On** check box is cleared, the router does not allow any device to automatically control router resources, such as port forwarding.
6. Type the advertisement period in minutes.

   The advertisement period specifies how often the router broadcasts its UPnP information. This value can range from 1 to 1440 minutes. The default period is 30 minutes. Shorter durations ensure that control points have current device status at the expense of more network traffic. Longer durations can compromise the freshness of the device status, but can significantly reduce network traffic.
7. Type the advertisement time to live in hops.

   The time to live for the advertisement is measured in hops (steps) for each UPnP packet sent. Hops are the steps a packet takes between routers. The number of hops can range from 1 to 255. The default value for the advertisement time to live is 4 hops, which should be fine for most home networks. If you notice that some devices are not being updated or reached correctly, it might be necessary to increase this value.
8. Click the **Apply** button.

The UPnP Portmap Table displays the IP address of each UPnP device that is accessing the router and which ports (internal and external) that device has opened. The UPnP Portmap Table also displays what type of port is open and whether that port is still active for each IP address.

- **To refresh the information in the UPnP Portmap Table:**

  Click the **Refresh** button.

Control Access to the Internet

5

This chapter explains how to prevent objectionable content from reaching the computers and other devices that are connected to your network.

This chapter includes the following sections:

- *Set Up Parental Controls*
- *Use Keywords to Block Internet Sites*
- *Block Services from the Internet*
- *Schedule When to Block Internet Sites and Services*
- *Avoid Blocking on a Trusted Computer*
- *Set Up Security Event Email Notifications*

Set Up Parental Controls

The first time that you select **Parental Controls** from the BASIC Home screen, your browser goes to the Live Parental Controls website, where you can learn more about Live Parental Controls and download the application.

NETGEAR
Connect with Innovation
Login | Help
United States
English
Worldwide
Search
Enter Keywords
Go
Products | Svc Provider | Solutions | Where to Buy | Support | Partners | Community | About | Shopping Cart
Home › Live Parental Controls
Print Email Favorites
Live Parental Controls
NETGEAR Live Parental Controls, powered by OpenDNS, is a router-based Web filtering solution available on NETGEAR Wireless-N router and gateway products.
Blocks up to 50 categories of Internet content
Designed to protect you from identity theft and scams
And it's FREE for NETGEAR customers!
WINNER
ptpamedia
Windows Users
Mac Users
Watch Video
Live Parental Controls

➢ **To set up Live Parental Controls:**

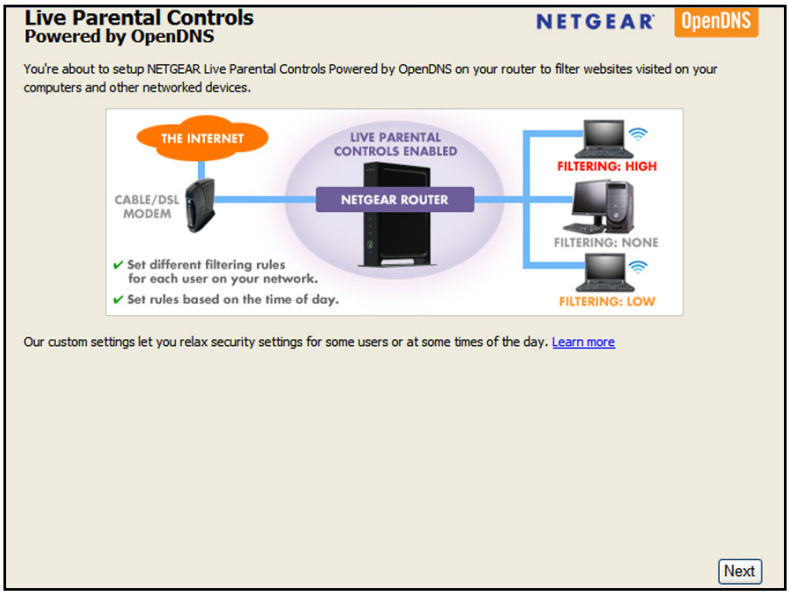
1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

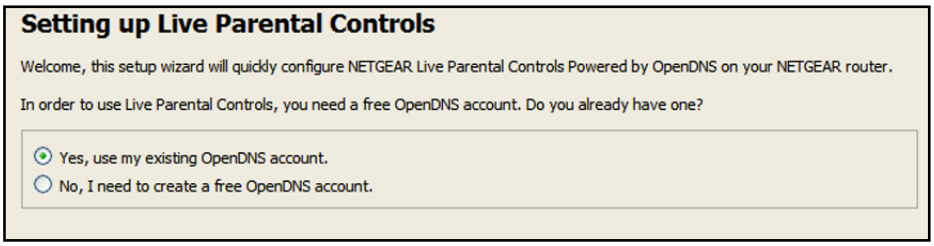
   The BASIC Home screen displays.
4. Select **Parental Controls**.
5. Click either the **Windows Users** or **Mac Users** button.
6. Follow the onscreen instructions to download and install the NETGEAR Live Parental Controls management utility.

After installation, Live Parental Controls automatically starts.


Live Parental Controls
Powered by OpenDNS
NETGEAR
OpenDNS
You're about to setup NETGEAR Live Parental Controls Powered by OpenDNS on your router to filter websites visited on your computers and other networked devices.
THE INTERNET
CABLE/DSL MODEM
LIVE PARENTAL CONTROLS ENABLED
NETGEAR ROUTER
FILTERING: HIGH
FILTERING: NONE
FILTERING: LOW
Set different filtering rules for each user on your network.
Set rules based on the time of day.
Our custom settings let you relax security settings for some users or at some times of the day. Learn more
Next

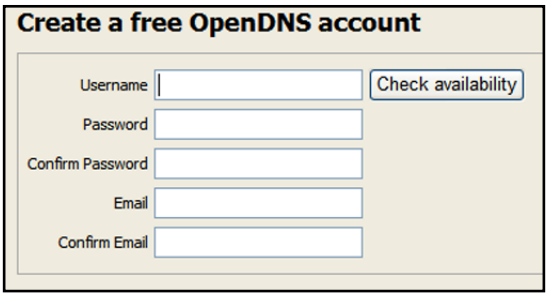
7. Click the **Next** button.
8. Read the note, and click the **Next** button again to proceed.

   Because Live Parental Controls uses free OpenDNS accounts, you are prompted to log in or create a free account.


Setting up Live Parental Controls
Welcome, this setup wizard will quickly configure NETGEAR Live Parental Controls Powered by OpenDNS on your NETGEAR router.
In order to use Live Parental Controls, you need a free OpenDNS account. Do you already have one?
Yes, use my existing OpenDNS account.
No, I need to create a free OpenDNS account.

9. Select a radio button as follows:
   - If you already have an OpenDNS account, leave the **Yes** radio button selected.
   - If you do not have an OpenDNS account, select the **No** radio button.
10. Click the **Next** button.

    If you are creating an account, the following screen displays:



11. Complete the fields and click the **Next** button.

    After you log on or create your account, the filtering level screen displays:

Live Parental Controls: choose a filtering level for your network
All computers connected to your router will be protected from the content you select below. You can customize your Live Parental Controls later on our website.
High
Protects against all adult-related sites, illegal activity, social networking sites, video sharing sites, phishing attacks and general time-wasters.
Moderate
Protects against all adult-related sites, illegal activity and phishing attacks.
Low
Protects against pornography and phishing attacks.
Minimal
Protects only against phishing attacks.
None
Nothing blocked.

12. Select a filtering level and click the **Next** button.

    The Setup is Complete screen displays.

13. Click the **Take me to the status screen** button.

    Parental controls are now set up for the router. The genie BASIC Home screen displays Parental Controls as Enabled.

Use Keywords to Block Internet Sites

You can use keywords to block certain Internet sites from your network. You can use blocking all the time or based on a schedule.

➢ **To block Internet sites:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

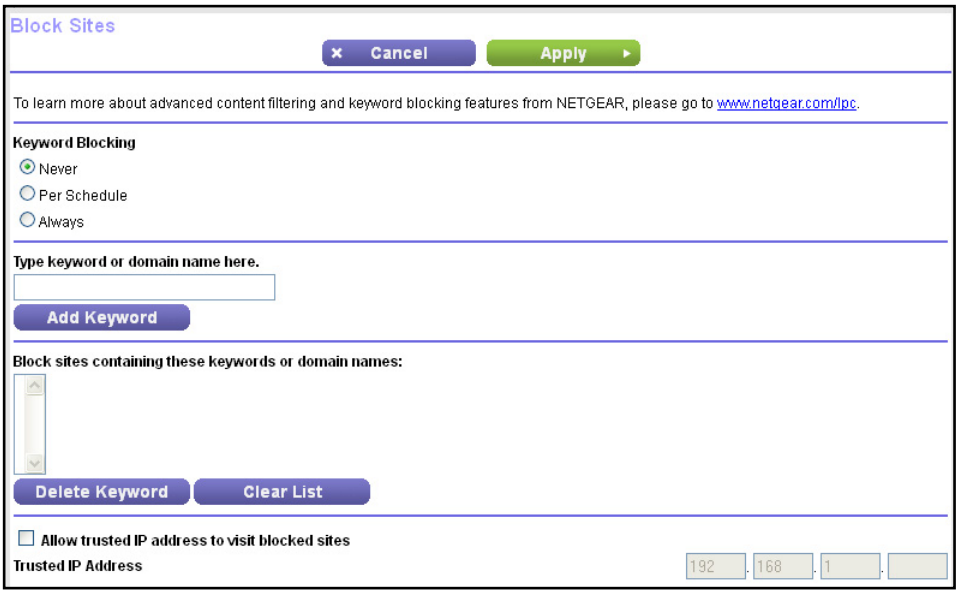
   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Security > Block Sites**.



5. Select a keyword blocking option:
   - **Per Schedule**. Use keyword blocking according to a schedule you set. (See *Schedule When to Block Internet Sites and Services* on page 51.)
   - **Always**. Use keyword blocking continuously.
6. In the **keyword** field, enter a keyword or domain that you want to block.

   Here are some sample entries:
   - Specify XXX to block http://www.badstuff.com/xxx.html.
   - Specify .com if you want to allow only sites with domain suffixes such as .edu or .gov.
   - Enter a period (**.**) to block all Internet browsing access.
7. Click the **Add Keyword** button.

   The keyword is added to the keyword list. The keyword list supports up to 32 entries.
8. Click the **Apply** button.

   Keyword blocking takes effect.

➢ **To delete keywords from the list:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The BASIC Home screen displays.

4. Select **ADVANCED > Security > Block Sites**.
5. Do one of the following:
   - To delete a single word, select it and click the **Delete Keyword** button.

     The keyword is removed from the list.
   - To delete all keywords on the list, click the **Clear List** button.

     All keywords are removed from the list.
6. Click the **Apply** button.

   Your changes are saved.

Block Services from the Internet

You can block Internet services on your network based on the type of service. You can block services all the time or based on a schedule.

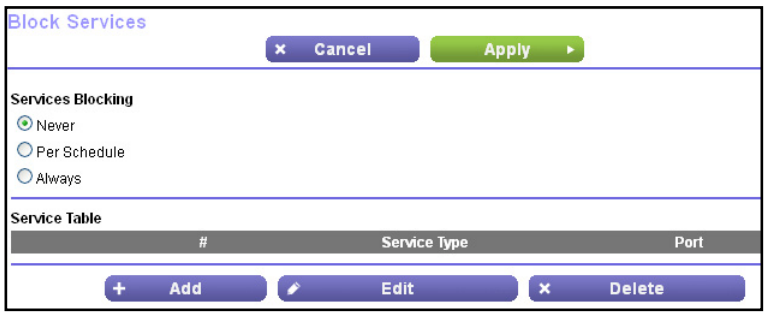
➢ **To block services:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Security > Block Services**.

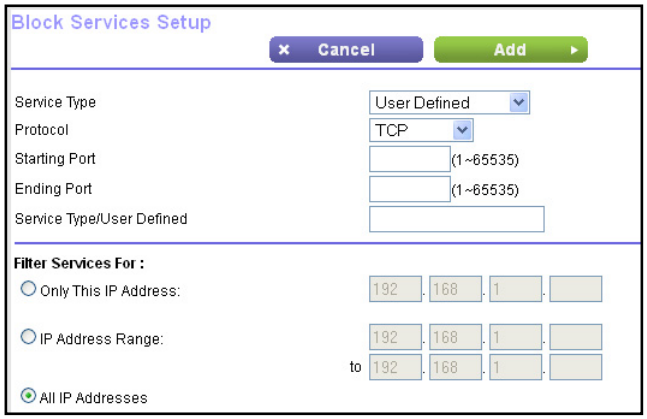


5. Specify when to block the services:

- To block the services continuously, select the **Always** radio button.
- To block the services based on a schedule, select the **Per Schedule** radio button.

  For information about how to specify the schedule, see *Schedule When to Block Internet Sites and Services* on page 51.

6. Click the **Add** button.



7. To add a service that is in the **Service Type** list, select the application or service.

   The settings for this service automatically display in the fields.

8. To add a service or application that is not the list, select **User Defined**.

   a. From the **Protocol** list, select a protocol.

      If you are not sure what protocol the service or application uses, select **TCP/UDP**.

   b. Enter the starting port and ending port numbers:

      If the service uses a single port number, enter that number in both fields.

      To find out which port numbers the service or application uses, you can contact the publisher of the application, ask user groups or news groups, or search on the Internet.

9. Select a filtering option:
   - **Only This IP Address**. Block services for a single computer.
   - **IP Address Range**. Block services for a range of computers with consecutive IP addresses on your network.
   - **All IP Addresses**. Block services for all computers on your network.
10. Click the **Add** button.

    Your changes are saved.

Schedule When to Block Internet Sites and Services

When you schedule blocking, the same schedule is used to block sites and to block services. For information about how to specify what you want the router to block, see *Use Keywords to Block Internet Sites* on page 47 and *Block Services from the Internet* on page 49.

➢ **To schedule blocking:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Security > Schedule**.

   The Schedule screen displays.
5. Specify when to block keywords and services:
   - **Days to Block**. Select the check box for each day that you want to block the keywords or select the **Every Day** check box, which automatically selects the check boxes for all days.
   - **Time of Day to Block**. Select a start and end time in 24-hour format or select **All Day** for 24-hour blocking.
6. Select your time zone from the list.
7. If you live in an area that observes daylight saving time, select the **Automatically adjust for daylight savings time** check box.
8. Click the **Apply** button.

   Your settings are saved.

Avoid Blocking on a Trusted Computer

You can exempt one trusted computer from blocking. The computer you exempt must have a fixed IP address. You can use the reserved IP address feature to specify the IP address. See *Reserve LAN IP Addresses* on page 60.

➢ **To specify a trusted computer:**

1. Launch a web browser from a computer or wireless device that is connected to the network.

2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

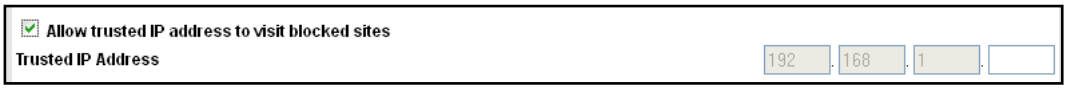
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Security > Block Sites**.

   The Block Sites screen displays.

5. Scroll down and select the **Allow trusted IP address to visit blocked sites** check box.



6. In the **Trusted IP Address** field, enter the IP address of the trusted computer.
7. Click the **Apply** button.

   Your changes are saved.

Set Up Security Event Email Notifications

The router can email you its logs. The log records router activity and security events such as attempts to access blocked sites or services.

➢ **To set up email notifications:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

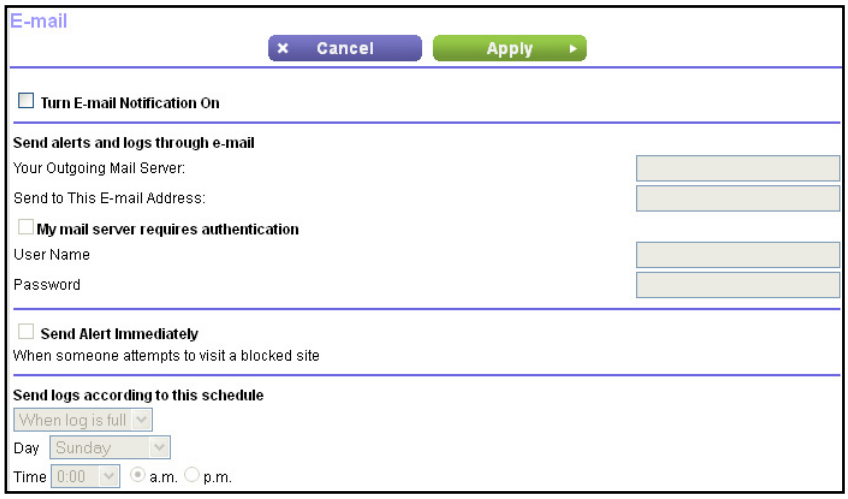
   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Security > E-mail**.



5. Select the **Turn E-mail Notification On** check box.
6. In the **Your Outgoing Mail Server** field, enter the name of your Internet provider outgoing (SMTP) mail server (such as mail.myISP.com).

   You might be able to find this information in the configuration screen of your email program. If you leave this field blank, log and alert messages are not sent.
7. In the **Send to This E-mail Address** field, enter the email address to which logs and alerts are sent.

   This email address is also used for the From address. If this field is blank, log and alert messages are not sent.
8. If your outgoing email server requires authentication, select the **My Mail Server requires authentication** check box.
   a. In the **User Name** field, type the user name for the outgoing email server.
   b. In the **Password** field, type the password for the outgoing email server.
9. To send alerts when someone attempts to visit a blocked site, select the **Send Alerts Immediately** check box.
10. To send logs based on a schedule, specify these settings:
    - From **Send logs according to this schedule** list, select the schedule type.
    - From the **Day** list, select the day.
    - From the **Time** list, select the time, and select the **am** or **pm** radio button.
11. Click the **Apply** button.

    Your settings are saved.

    Logs are sent according to the schedule that you set. If the log fills before the specified time, it is sent. After the log is sent, it is cleared from the router memory. If the router cannot email the log and the log buffer fills up, the router overwrites the log.

Specify Network Settings

6

This chapter includes the following sections:

- *View or Change the WAN Settings*
- *Set Up a Default DMZ Server*
- *Change the Router's Device Name*
- *Change the LAN TCP/IP Settings*
- *Specify the IP Addresses That the Router Assigns*
- *Reserve LAN IP Addresses*
- *Use the WPS Wizard for WiFi Connections*
- *Specify Basic WiFi Settings*
- *Change the WiFi Security Option*
- *Use the Router as a Wireless Access Point*
- *Set Up a WiFi Guest Network*
- *Control the Wireless Radio*
- *Set Up a WiFi Schedule*
- *Specify WPS Settings*
- *Dynamic DNS*

View or Change the WAN Settings

You can view the wide area network (WAN) settings for the Internet port. You can set up a DMZ (demilitarized zone) server, change the maximum transmit unit (MTU) size, and enable the router to respond to a ping to its WAN (Internet) port.

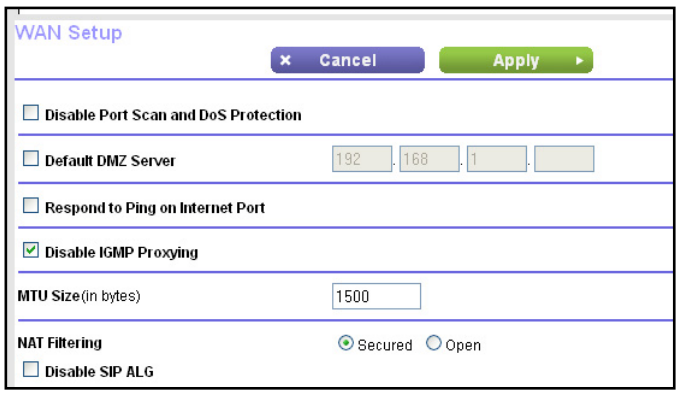
➢ **To view or change the WAN settings:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > WAN Setup**.



5. View or change the following settings:
   - **Disable Port Scan and DoS Protection**. DoS protection protects your LAN against denial of service attacks such as Syn flood, Smurf Attack, Ping of Death, and many others. Select this check box only in special circumstances.
   - **Default DMZ Server**. This feature is sometimes helpful when you are playing online games or videoconferencing, but it makes the firewall security less effective. See *Set Up a Default DMZ Server* on page 56.
   - **Respond to Ping on Internet Port**. This feature allows your router to be discovered. Use this feature only as a diagnostic tool or if you have a specific reason.
   - **Disable IGMP Proxying**. IGMP proxying allows a computer on the local area network (LAN) to receive the multicast traffic it is interested in from the Internet. If you do not need this feature, you can select this check box to disable it.
   - **MTU Size (in bytes)**. The normal MTU (maximum transmit unit) value for most Ethernet networks is 1500 bytes, or 1492 bytes for PPPoE connections. Change the

MTU only if you are sure that it is necessary for your Internet connection. See *Change the MTU Size* on page 30.

6. Click the **Apply** button.

   Your changes are saved.

Set Up a Default DMZ Server

The default DMZ server feature is helpful when you are using some online games and videoconferencing applications that are incompatible with Network Address Translation (NAT). The router is programmed to recognize some of these applications and to work correctly with them, but other applications might not function well. In some cases, one local computer can run the application correctly if the IP address for that computer is entered as the default DMZ server.

WARNING:

DMZ servers pose a security risk. A computer designated as the default DMZ server loses much of the protection of the firewall and is exposed to exploits from the Internet. If compromised, the DMZ server computer can be used to attack other computers on your network.

The router usually detects and discards incoming traffic from the Internet that is not a response to one of your local computers or a service that you configured in the Port Forwarding/Port Triggering screen. Instead of discarding this traffic, you can specify that the router forwards the traffic to one computer on your network. This computer is called the default DMZ server.

➢ **To set up a default DMZ server:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > WAN Setup**.

   The WAN Setup screen displays.
5. Select the **Default DMZ Server** check box.

6. Type the IP address.
7. Click the **Apply** button.

   Your settings are saved.

Change the Router's Device Name

The router's device name is WNR2000v5. This device name displays in a file manager when you browse your network.

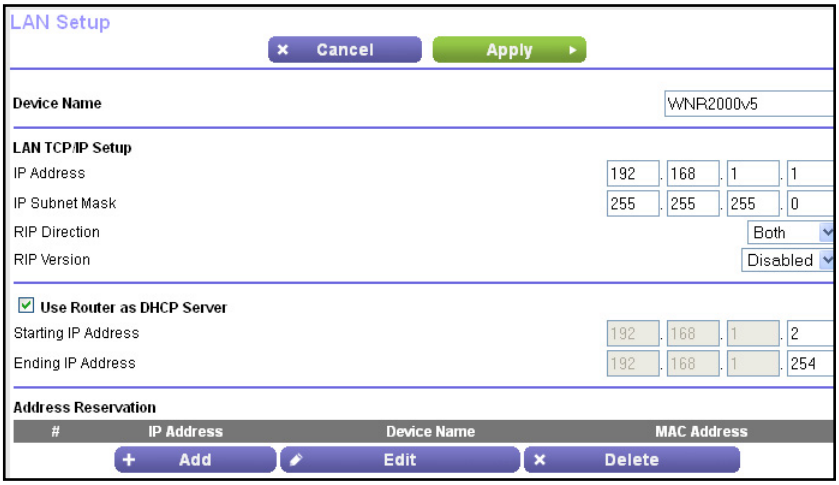
➢ **To change the router's device name:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > LAN Setup**.



5. In the **Device Name** field, type a new name.
6. Click the **Apply** button.

   Your settings are saved.

Change the LAN TCP/IP Settings

The router is preconfigured to use private IP addresses on the LAN side and to act as a DHCP server. The router's default LAN IP configuration is as follows:

- **LAN IP address**. 192.168.1.1
- **Subnet mask**. 255.255.255.0

These addresses are part of the designated private address range for use in private networks and are suitable for most applications. If your network requires a different IP addressing scheme, you can change these settings.

You might want to change these settings if you need a specific IP subnet that one or more devices on the network use or if you have competing subnets with the same IP scheme.

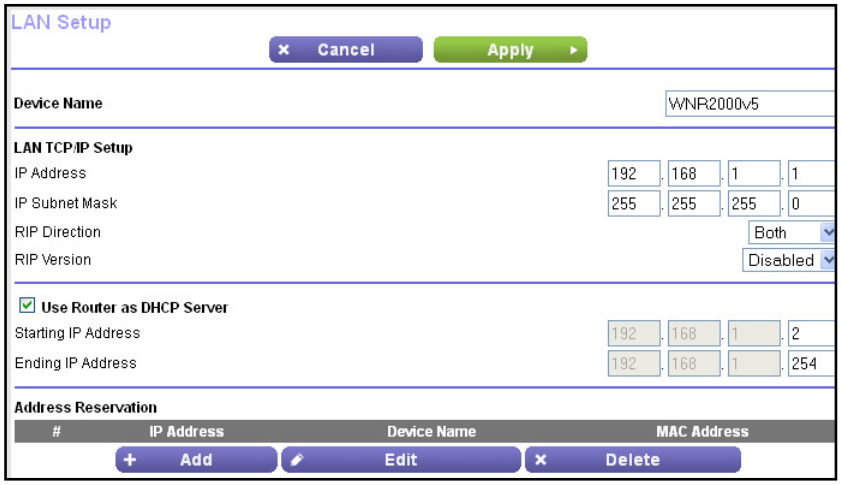
➢ **To change the LAN TCP/IP settings:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Setup > LAN Setup**.



5. In the **IP Address** field, type the IP address.
6. In the **IP Subnet Mask** field, type the subnet mask of the router.

The IP address and subnet mask identify which addresses are local to a specific device and which must be reached through a gateway or router.

7. Click the **Apply** button.

   Your settings are saved.

   If you changed the LAN IP address of the router, you are disconnected when this change takes effect.

To reconnect, close your browser, relaunch it, and log in to the router.

Specify the IP Addresses That the Router Assigns

By default, the router acts as a Dynamic Host Configuration Protocol (DHCP) server. The router assigns IP, DNS server, and default gateway addresses to all computers connected to the LAN. The assigned default gateway address is the LAN address of the router.

These addresses must be part of the same IP address subnet as the router's LAN IP address. Using the default addressing scheme, define a range between 192.168.0.2 and 192.168.0.254, although you can save part of the range for devices with fixed addresses.

The router delivers the following parameters to any LAN device that requests DHCP:

- An IP address from the range that you define
- Subnet mask
- Gateway IP address (the router's LAN IP address)
- DNS server IP address (the router's LAN IP address)

➢ **To specify the pool of IP addresses that the router assigns:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

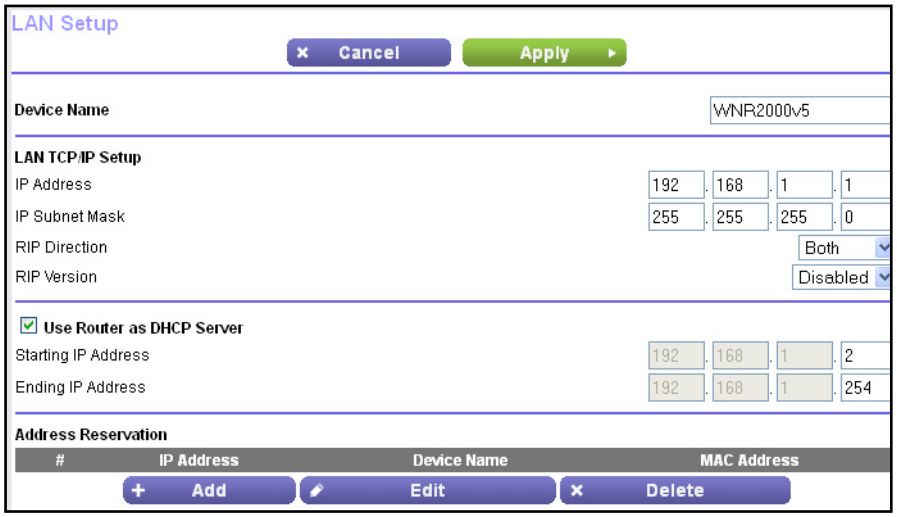
   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Setup > LAN Setup**.



5. Specify the range of IP addresses that the router assigns:
   a. In the **Starting IP Address** field, type the lowest number in the range.

      This IP address must be in the same subnet as the router.

   b. In the **Ending IP Address** field, type the number at the end of the range of IP addresses.

      This IP address must be in the same subnet as the router.

6. Click the **Apply** button.

   Your settings are saved.

Reserve LAN IP Addresses

When you specify a reserved IP address for a computer on the LAN, that computer always receives the same IP address each time it accesses the router's DHCP server. Assign reserved IP addresses to computers or servers that require permanent IP settings.

➢ **To reserve an IP address:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The BASIC Home screen displays.

4. Select **ADVANCED > Setup > LAN Setup**.

   The LAN Setup screen displays.

5. In the Address Reservation section, click the **Add** button.
6. In the **IP Address** field, type the IP address to assign to the computer or server.

   Choose an IP address from the router's LAN subnet, such as 192.168.0.x.

7. Type the MAC address of the computer or server.

   Tip: If the computer is already on your network, you can copy its MAC address from the Attached Devices screen and paste it here.

8. Click the **Apply** button.

   The reserved address is entered into the table.

   The reserved address is not assigned until the next time the computer contacts the router's DHCP server. Reboot the computer, or access its IP configuration and force a DHCP release and renew.

- **To edit a reserved address entry:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. Type **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Setup > LAN Setup**.

   The LAN Setup screen displays.

5. Select the radio button next to the reserved address.
6. Click the **Edit** button.
7. Change the settings.
8. Click the **Apply** button.

   Your settings are saved.

- **To delete a reserved address entry:**

1. Launch a web browser from a computer or wireless device that is connected to the network.

2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Setup > LAN Setup**.

   The LAN Setup screen displays.

5. Select the radio button next to the reserved address.
6. Click the **Delete** button.

   The address is removed.

Use the WPS Wizard for WiFi Connections

The WPS Wizard helps you add a wireless computer or device to your WiFi network without typing the WiFi password.

➢ **To use the WPS Wizard:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > WPS Wizard**.

   A screen displays that explains WPS.

5. Click the **Next** button.

   The WPS screen displays.

6. Select a setup method:
   - **Push button**. Click the **WPS** button on this screen.
   - **PIN Number**. The screen adjusts. Enter the client security PIN and click the **Next** button.

7. Within two minutes, go to the client device and use its WPS software to connect to the WiFi network.

   The WPS process automatically sets up your wireless computer with the network password when it connects. The router WPS screen displays a confirmation message.

Specify Basic WiFi Settings

The router comes with preset security. This means that the WiFi network name (SSID), network key (password), and security option (encryption protocol) are preset in the factory. You can find the preset SSID and password on the router label. The preset SSID and password are uniquely generated for every device to maximize your wireless security.

NETGEAR recommends that you do not change your preset security settings. If you change your preset security settings, make a note of the new settings and store the note in a safe place where you can easily find it.

If you use a wireless computer to change the SSID or other wireless security settings, you are disconnected when you click the **Apply** button. To avoid this problem, use a computer with a wired connection to access the router.

➢ **To specify basic wireless settings:**

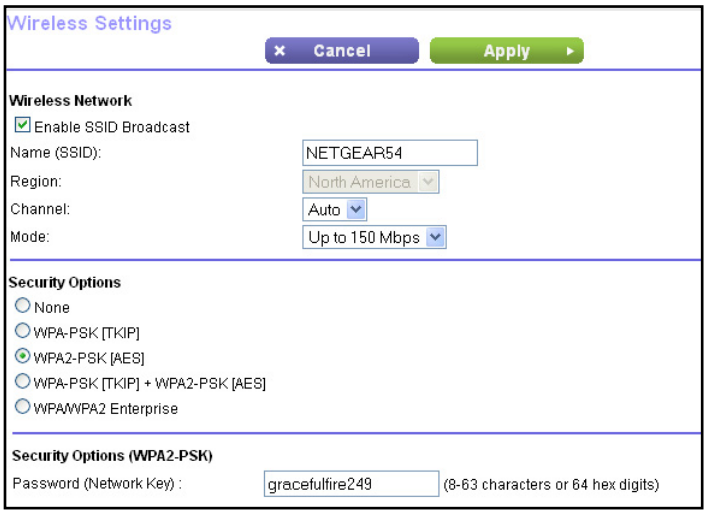
1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **Wireless**.



5. To control the SSID broadcast, select or clear the **Enable SSID Broadcast** check box.

   When this check box is selected, the router broadcasts its network name (SSID) so that it displays when you scan for local WiFi networks on your computer or wireless device.

6. To change the SSID, type a new name in the **Name (SSID)** field.

   The name can be up to 32 characters long and is case-sensitive. The default SSID is randomly generated and is on the router's label. If you change the name, make sure to write down the new name and keep it in a safe place.

7. In the **Region** list, select your region.

   In some locations, you cannot change this setting.

8. To change the wireless channel, select a number in the **Channel** list.

   In some regions, not all channels are available. Do not change the channel unless you experience interference (shown by lost connections or slow data transfers). If this happens, experiment with different channels to see which is the best.

   When you use multiple access points, it is better if adjacent access points use different channels to reduce interference. NETGEAR recommends channel spacing between adjacent access points of four channels (for example, use Channels 1 and 5, or 6 and 10).

9. To change the mode, select it from the **Mode** list.
   - **Up to 150 Mbps**. This is the default setting, which allows 802.11n and 802.11g wireless devices to join the network.
   - **g & b**. This setting supports up to 54 Mbps. The
   - **300-Mbps**. This setting allows 802.11n devices to connect at this speed.

10. Click the **Apply** button.

    Your settings are saved.

If you used WiFi to connect to the network and you changed the SSID, you are disconnected from the network.

11. Make sure that you can connect with WiFi to the network with its new settings.

    If you cannot connect, check the following:

    - If your computer or wireless device is connected to another WiFi network in your area, update the wireless network selection in your computer or wireless device to match the current settings for your network. Some wireless devices automatically connect to the first open network without wireless security that they discover.
    - Is your computer or wireless device is trying to connect to your network with its old settings (before you changed the settings)? If it is, update the wireless network selection in your computer or wireless device to match the current settings for your network.

Change the WiFi Security Option

Your router comes with preset WPA2 or WPA security. The password that you enter to connect to your network is unique to your router and is on the router label. *NETGEAR recommends that you use the preset security but you can change the password. NETGEAR recommends that you do not disable security.*

➢ **To change the WPA settings:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **Wireless**.
5. Under Security Options, select a WPA option:
   - **WPA2-PSK [AES]**
   - **WPA-PSK [TKIP] + WPA2-PSK [AES]**
   - **WPA/WPA2 Enterprise**

   The WPA2 options use the newest standard for the strongest security but some older computers and wireless devices cannot use WPA2. By default, the **WPA-PSK [TKIP] + WPA2-PSK [AES]** radio button is selected so that new or old computers and wireless devices can connect to the WiFi network by using either WPA2 or WPA security.

   The **Passphrase** field displays.
6. In the **Passphrase** field, enter the network key (password) that you want to use.

   It is a text string from 8 to 63 characters.
7. Write down the new password and keep it in a secure place for future reference.
8. Click the **Apply** button.

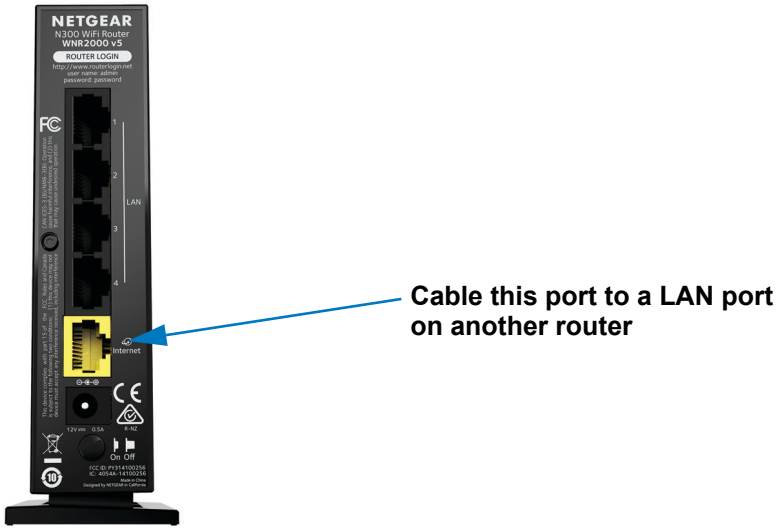
   Your settings are saved.

Use the Router as a Wireless Access Point

You can set up the router to run as an access point (AP) on the same local network as another router.

➢ **To set up the router as an AP:**

1. Use an Ethernet cable to connect the Internet port of this router to a LAN port in the other router.



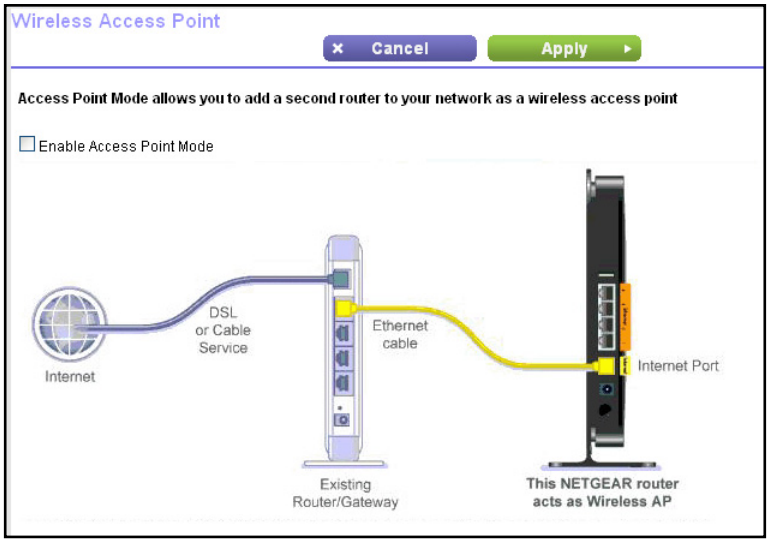
2. Launch a web browser from a computer or wireless device that is connected to the network.
3. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
4. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

5. Select **ADVANCED > Advanced Setup > Wireless AP**.



6. Select the **Enable AP Mode** check box.
7. Scroll down and select a radio button for the IP address setting:
   - **Get dynamically from existing router**. The other router on the network assigns an IP address to this router while this router is in AP mode.
   - **Enable fixed IP settings on this device (not recommended)**. Use this setting if you want to manually assign a specific IP address to this router while it is in AP mode. Using this option effectively requires advanced network experience.

   Note: To avoid interference with other routers or gateways in your network, NETGEAR recommends that you use different wireless settings on each router. You can also turn off the wireless radio on the other router or gateway and use the WNR2000v5 only for wireless client access.

8. Click the **Apply** button.

   The IP address of the router changes and you are disconnected.

To reconnect, close and restart your browser and type **http://wwwrouterlogin.net**.

Set Up a WiFi Guest Network

A guest network allows visitors at your home to use the Internet without using your wireless security key. You can add a guest network to each wireless network: 2.4 GHz b/g/n and 5.0 GHz a/n.

➢ **To set up a guest network:**

1. Launch a web browser from a computer or wireless device that is connected to the network.

2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

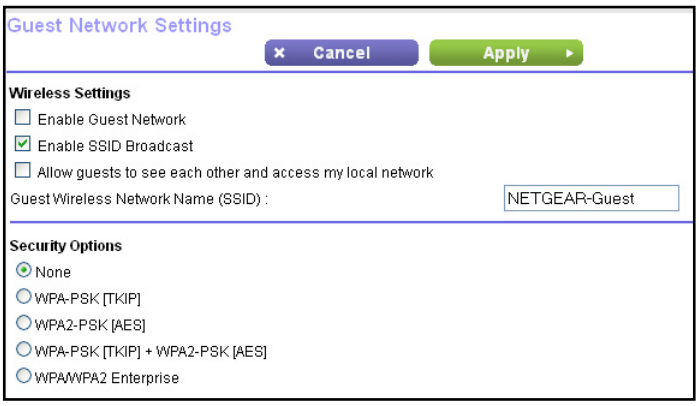
   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **Guest Network**.



5. Select any of the following wireless settings:
   - **Enable Guest Network**. When this check box is selected, the guest network is enabled and guests can connect to your network using the SSID of this profile.
   - **Enable SSID Broadcast**. If this check box is selected, the wireless access point broadcasts its name (SSID) to all wireless stations. Stations with no SSID can adopt the correct SSID for connections to this access point.
   - **Allow guest to see each other and access my local network**. If this check box is selected, anyone who connects to this SSID has access to your local network, not just Internet access.

6. Give the guest network a name.

   The guest network name is case-sensitive and can be up to 32 characters. You then manually configure the wireless devices in your network to use the guest network name in addition to the main SSID.

7. Select a security option.

   The WPA2 options use the newest standard for the strongest security, but some older computers and wireless devices cannot use it. NETGEAR recommends that you select the **WPA-PSK [TKIP] + WPA2-PSK [AES]** radio button. This setting protects your WiFi network and lets computers and wireless devices connect to the WiFi network by using either WPA2 or WPA security.

8. Click the **Apply** button.

   Your settings are saved.

Control the Wireless Radio

The router has an internal wireless radio that broadcasts signals in the 2.4 GHz range. By default, this radio is on so that you can connect wirelessly to the router. When the wireless radio is off, you can still use an Ethernet cable for a LAN connection to the router.

You can turn the wireless radio on and off with the **WiFi On/Off** button on the router, or you can log in to the router and enable or disable the wireless radios. If you are close to the router, it might be easier to press its **WiFi On/Off** button . If you are away from the router or have already logged in, it might be easier to enable or disable the radios.

Use the WiFi On/Off Button

➢ **To turn the wireless radios off and on with the WiFi On/Off button:**

Press the **WiFi On/Off** button on the router for two seconds.

If you turn off the wireless radios, the WiFi On/Off LED and the WPS LED turn off. If you turn on the wireless radios, the WiFi On/Off LED and the WPS LED light.

Enable or Disable the Wireless Radio

If you used the **WiFi On/Off** button to turn off the wireless radio, you can't log in to the router to turn it back on. You must press the **WiFi On/Off** button again for two seconds to turn the wireless radio back on.

➢ **To enable or disable the wireless radio:**

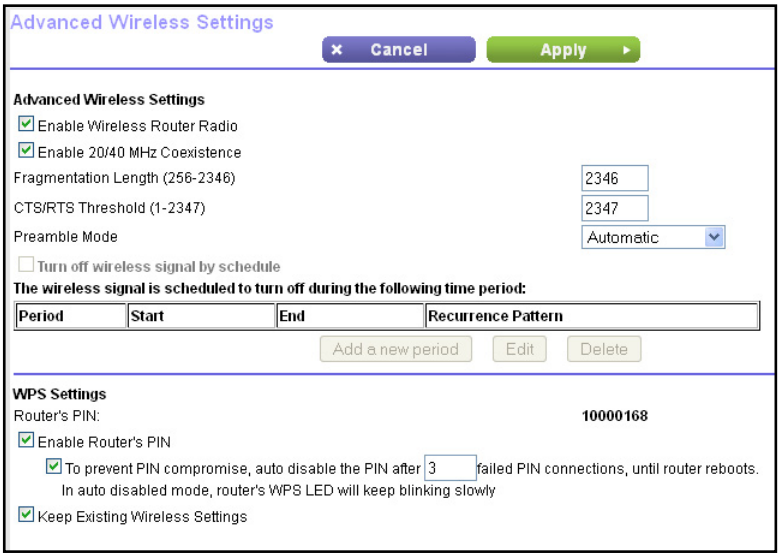
1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Advanced Setup > Wireless Settings**.



5. Select or clear the **Enable Wireless Router Radio** check box.

   Clearing this check box turns off the WiFi feature of the router.

6. Click the **Apply** button.

   If you disabled the wireless radio, the WiFi LED turns off. If you enabled the wireless radio, the WiFi LED lights.

Set Up a WiFi Schedule

You can use this feature to turn off the wireless signal from your router at times when you do not need a wireless connection. For example, you might turn it off for the weekend if you leave town.

➢ **To set up the wireless schedule:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

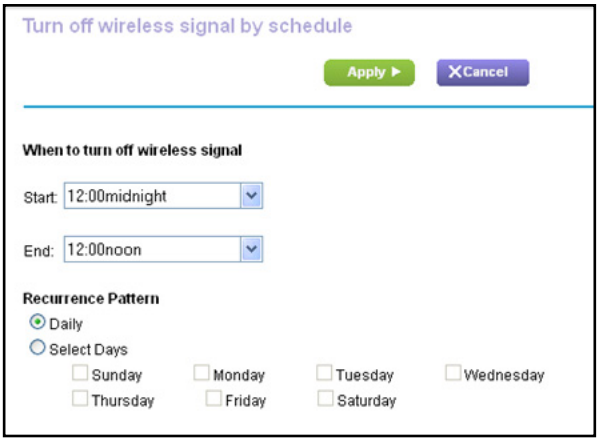
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Advanced Setup > Wireless Settings**.

   The Advanced Wireless Settings screen displays.

5. Click the **Add a new period** button.



6. Use the lists, radio buttons, and check boxes to set up a period during which you want to turn off the wireless signal.
7. Click the **Apply** button.

   The Advanced Wireless Settings screen displays.
8. Select the **Turn off wireless signal by schedule** check box to activate the schedule.
9. Click the **Apply** button.

   Your settings are saved.

Specify WPS Settings

Wi-Fi Protected Setup (WPS) lets you join the WiFi network without typing the WiFi password.

➢ **To specify WPS settings:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > Wireless Settings**.

   The Advanced Wireless Settings screen displays.

The Router's PIN field displays the PIN that you use on a registrar (for example, from the Network Explorer on a Vista Windows computer) to configure the router's wireless settings through WPS.

5. (Optional) Select or clear the **Enable Router's PIN** check box.

   The PIN function might temporarily be disabled when the router detects suspicious attempts to break into the router's wireless settings by using the router's PIN through WPS. You can manually enable the PIN function by selecting the **Enable Router's PIN** check box.

6. (Optional) Select or clear the **Keep Existing Wireless Settings** check box.

   By default, the **Keep Existing Wireless Settings** check box is selected. NETGEAR recommends that you leave this check box selected.

   If you clear this check box, the next time a new wireless client uses WPS to connect to the router, the router wireless settings change to an automatically generated random SSID and security key.

7. Click the **Apply** button.

   Your settings are saved.

Dynamic DNS

If your Internet provider gave you a permanently assigned IP address, you can register a domain name and have that name linked with your IP address by public Domain Name Servers (DNS). However, if your Internet account uses a dynamically assigned IP address, you do not know in advance what your IP address is, and the address can change frequently. In this case, you can use a commercial Dynamic DNS service. This type of service lets you register your domain to their IP address and forwards traffic directed at your domain to your frequently changing IP address.

If your Internet provider assigns a private WAN IP address (such as 192.168.x.x or 10.x.x.x), the Dynamic DNS service does not work because private addresses are not routed on the Internet.

Your router contains a client that can connect to the Dynamic DNS service that DynDNS.org provided. First, visit their website at *http://www.dyndns.org* and obtain an account and host name that you configure in the router. Then, whenever your Internet provider-assigned IP address changes, your router automatically contacts the Dynamic DNS service provider, logs in to your account, and registers your new IP address. If your host name is hostname, for example, you can reach your router at http://hostname.dyndns.org.

➢ **To set up Dynamic DNS:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

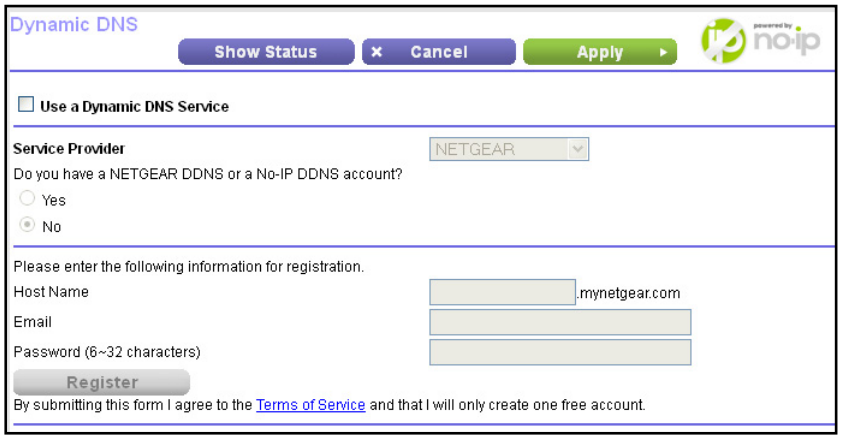
A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. **Select ADVANCED > Advanced Setup > Dynamic DNS**.



5. Register for an account with one of the Dynamic DNS service providers whose URLs display in the **Service Provider** list.
6. Select the **Use a Dynamic DNS Service** check box.
7. Select the URL for your Dynamic DNS service provider.

   For example, if your Dynamic DNS service provider is DynDNS.org, select **www.DynDNS.org**.

8. In the **Host Name** field, type the host name (or domain name) that your Dynamic DNS service provider gave you.
9. In the **User Name** field, type the user name for your Dynamic DNS account.

   This name is the name that you use to log in to your account, not your host name.

10. In the **Password** field, type the password (or key) for your Dynamic DNS account.
11. Click the **Apply** button.

    Your settings are saved.

Manage Your Network

7

This chapter describes the router settings for administering and maintaining your router and home network.

This chapter includes the following sections:

- *View Router Information*
- *Reboot the Router*
- *View Logs of Router Activity*
- *Monitor Internet Traffic*
- *Manage the Router Configuration File*
- *Change the admin Password*
- *Remote Management*
- *Remote Management*

View Router Information

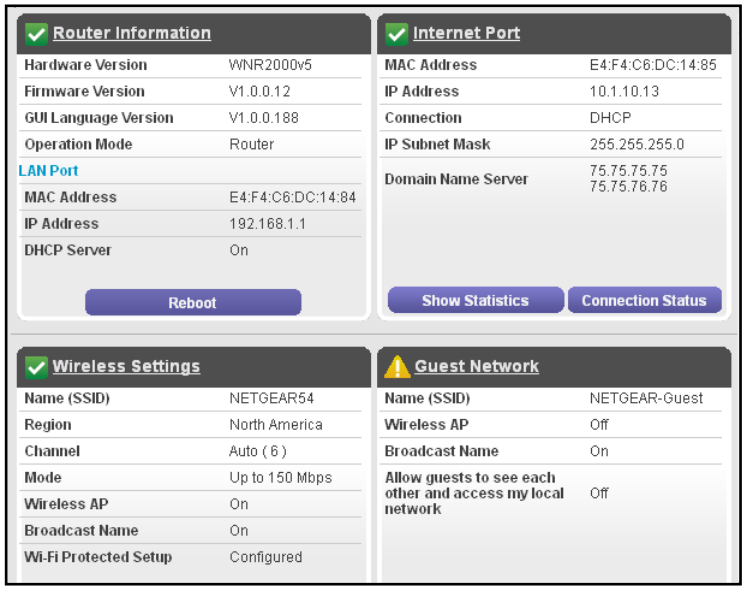
➢ **To view router status and usage information:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED**.



View Internet Port Information

➢ **To view router Internet port information:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The BASIC Home screen displays.

4. Select **ADVANCED**.

   The ADVANCED Home screen displays. The Internet Port pane displays these WAN Internet port settings:

   - **MAC Address**. The MAC address of the WAN Internet port.
   - **IP Address/Mask**. The IP address of the WAN Internet port.
   - **Connection**. The type of WAN Internet port connection.
   - **Default Gateway**. The IP address of the default gateway.
   - **Domain Name Server**. The IP address of the Domain Name Server.

Display Internet Port Statistics

➢ **To display Internet port statistics:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

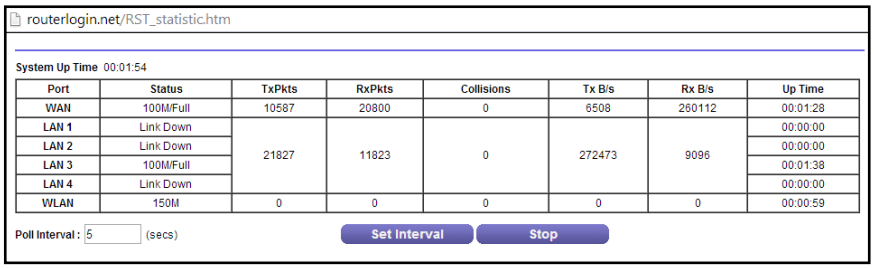
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

4. The BASIC Home screen displays
5. Click the **ADVANCED** tab.

   The ADVANCED Home screen displays.

6. In the Internet Port pane, click the **Show Statistics** button.



   The following information displays:

   - **System Up Time**. The time elapsed since the router was last restarted.
   - **Port**. The statistics for the WAN (Internet) and LAN (Ethernet) ports. For each port, the screen displays the following information:

- **Status**. The link status of the port.
- **TxPkts**. The number of packets transmitted on this port since reset or manual clear.
- **RxPkts**. The number of packets received on this port since reset or manual clear.
- **Collisions**. The number of collisions on this port since reset or manual clear.
- **Tx B/s**. The current transmission (outbound) bandwidth used on the WAN and LAN ports.
- **Rx B/s**. The current reception (inbound) bandwidth used on the WAN and LAN ports.
- **Up Time**. The time elapsed since this port acquired the link.
- **Poll Interval**. The interval at which the statistics are updated in this screen.

7. To change the polling frequency, enter a time in seconds in the **Poll Interval** field and click the **Set Interval** button.

   To stop the polling entirely, click the **Stop** button.

Check the Internet Connection Status

➢ **To check the Internet connection status:**

1. Launch an Internet browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

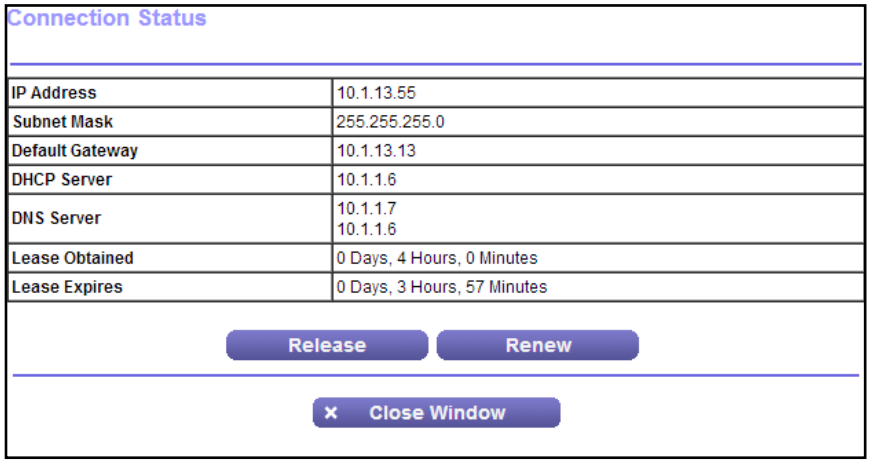
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Click the **ADVANCED** tab.

   The ADVANCED Home screen displays.

5. In the Internet Port pane, click the **Connection Status** button.



   The following information displays:

   - **IP Address**. The IP address that is assigned to the router.
   - **Subnet Mask**. The subnet mask that is assigned to the router.
   - **Default Gateway**. The IP address for the default gateway that the router communicates with.
   - **DHCP Server**. The IP address for the Dynamic Host Configuration Protocol server that provides the TCP/IP configuration for all the computers that are connected to the router.
   - **DNS Server**. The IP address of the Domain Name Service server that provides translation of network names to IP addresses.
   - **Lease Obtained**. The date and time when the lease was obtained.
   - **Lease Expires**. The date and time that the lease expires.

6. To return the status of all items to 0, click the **Release** button.
7. To refresh the screen, click the **Renew** button.

To exit the screen, click the **Close Window** button.

View Wireless Settings

➢ **To view wireless settings:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The BASIC Home screen displays.

4. Select **ADVANCED**.

   The ADVANCED Home screen displays. The Wireless Settings pane displays the following information:

   - **Name (SSID)**. The wireless network name (SSID) that the router uses.
   - **Region**. The geographic region where the router is being used. It is illegal to use the wireless features of the router in some parts of the world.
   - **Channel**. The operating channel of the wireless port being used. The default channel is Auto. When Auto is selected, the router finds the best operating channel available.
   - **Mode**. The wireless communication mode: Up to 54 Mbps, Up to 145 Mbps (default), or Up to 300 Mbps.
   - **Wireless AP**. Indicates whether the router WiFi radio is on or off. If the WiFi radio is turned off, the WiFi LED on the front panel is off.
   - **Broadcast Name**. Indicates whether the router is broadcasting its SSID.
   - **Wi-Fi Protected Setup**. Indicates whether Wi-Fi Protected Setup is configured for this network.

View Guest Network Settings

By default, the guest network is disabled. For information about how to set up a guest network, see *Set Up a WiFi Guest Network* on page 68.

➢ **To view guest network settings:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED**.

   The Guest Network pane displays the following information:

   - **Name (SSID)**. The wireless network name (SSID) that the guest network uses.
   - **Wireless AP**. Indicates whether the router WiFi radio is on or off. If the WiFi radio is turned off, the WiFi LED on the front panel is off.
   - **Broadcast Name**. Indicates whether the router is broadcasting the guest network SSID.

- **Allow guests to see each other and to access my local network**. If this feature is on, anyone who connects to this SSID has access to your local network, not just Internet access.

Reboot the Router

Rebooting the router disconnects all computers and mobile devices from the router's network.

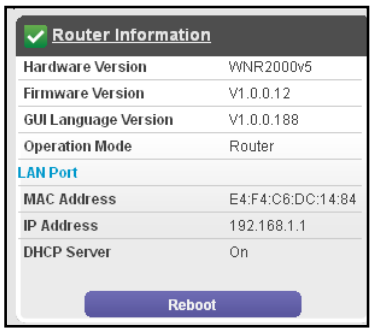
➢ **To reboot the router:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED**.
5. In the Router Information pane, click the **Reboot** button.



   A confirmation message displays.
6. Click the **OK** button.

   The router reboots.

View Logs of Router Activity

The log is a detailed record of the websites you accessed or attempted to access. Up to 256 entries are stored in the log. Log entries display only when keyword blocking is enabled. No log entries are made for the trusted LAN client.

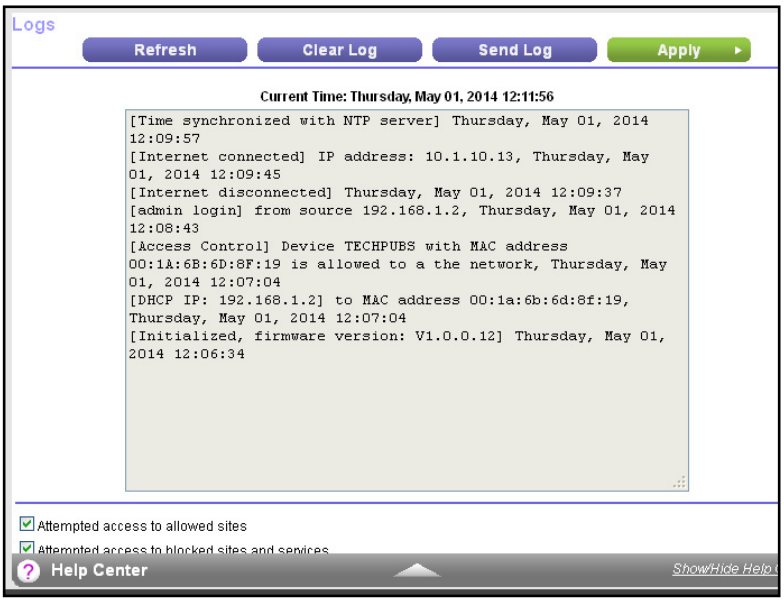
➢ **To view and customize logs:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Administration > Logs**.


Logs
Refresh
Clear Log
Send Log
Apply
Current Time: Thursday, May 01, 2014 12:11:56
[Time synchronized with NTP server] Thursday, May 01, 2014 12:09:57
[Internet connected] IP address: 10.1.10.13, Thursday, May 01, 2014 12:09:45
[Internet disconnected] Thursday, May 01, 2014 12:09:37
[admin login] from source 192.168.1.2, Thursday, May 01, 2014 12:08:43
[Access Control] Device TECHPUBS with MAC address 00:1A:6B:6D:8F:19 is allowed to a the network, Thursday, May 01, 2014 12:07:04
[DHCP IP: 192.168.1.2] to MAC address 00:1a:6b:6d:8f:19, Thursday, May 01, 2014 12:07:04
[Initialized, firmware version: V1.0.0.12] Thursday, May 01, 2014 12:06:34
Attempted access to allowed sites
Help Center

   The log screen shows the following information:

   - **Description**. The action that occurred.
   - **Count**. The number of occurrences.
   - **Last Occurrence**. The date and time the log entry was recorded.
   - **Target**. The name or IP address of the website or news group visited or to which access was attempted.
   - **Source**. The source IP address of the initiating device for this log entry.
5. To customize the log, scroll down and clear or select the check boxes.
6. Click the **Apply** button.

   Your settings are saved.
7. To refresh the log screen, click the **Refresh** button.

8. To clear the log entries, click the **Clear Log** button.

   To send the log immediately, click the **Send Log** button.

Monitor Internet Traffic

Traffic metering allows you to monitor the volume of Internet traffic that passes through the router Internet port. You can set limits for traffic volume.

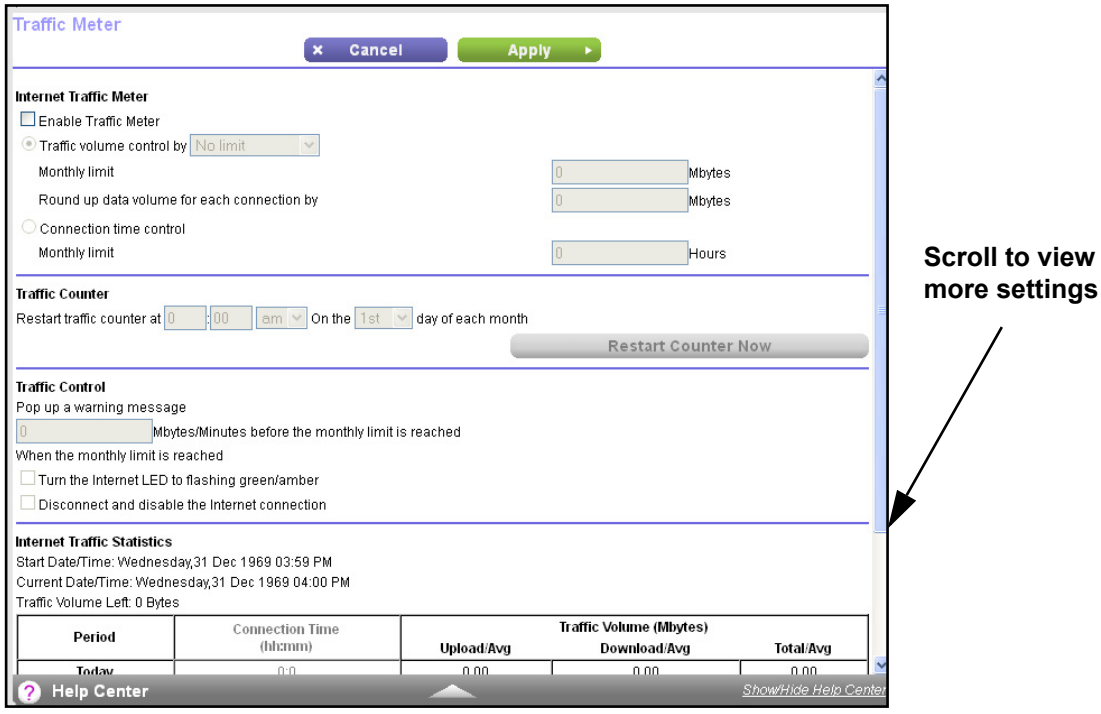
➢ **To monitor Internet traffic:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > Traffic Meter**.



5. Select the **Enable Traffic Meter** check box.
6. (Optional) Control the volume of Internet traffic.

You can use either the traffic volume control feature or the connection time control feature:

- Select the **Traffic volume control by** radio button and select one of the following options:
  - **No Limit**. No restriction is applied when the traffic limit is reached.
  - **Download only**. The restriction is applied to incoming traffic only.
  - **Both Directions**. The restriction is applied to both incoming and outgoing traffic.
- Select the **Connection time control** radio button and enter the allowed hours in the **Monthly limit** field.

7. (Optional) If your ISP charges for extra data volume when you make a new connection, enter the extra data volume in MB in the **Round up data volume for each connection by** field.
8. In the Traffic Counter section, set the traffic counter to begin at a specific time and date.

   If you want the traffic counter to start immediately, click the **Restart Counter Now** button.
9. In the Traffic Control section, specify whether the router should issue a warning message before the monthly limit of Mbytes or hours is reached.

   By default, the value is 0 and no warning message is issued. You can select one of the following to occur when the limit is attained:

   - The Internet LED blinks green or amber.
   - The Internet connection is disconnected and disabled.
10. Click the **Apply** button.

    The Internet Traffic Statistics section helps you to monitor the data traffic.
11. To update the Traffic Statistics section, click the **Refresh** button.
12. To display more information about the data traffic on your router and to change the poll interval, click the **Traffic Status** button.

Manage the Router Configuration File

The configuration settings of the router are stored within the router in a configuration file. You can back up (save) this file to your computer, restore it, or reset it to the factory default settings.

Back Up Settings

➢ **To back up the router's configuration settings:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

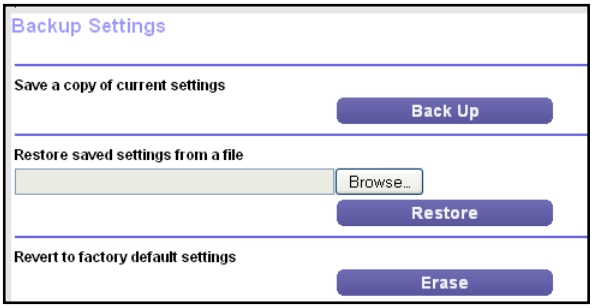
A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Administration > Backup Settings**.



5. Click the **Back Up** button.
6. When prompted, specify a location on your network.

   A copy of the current settings is saved in the location you specified.

Restore Configuration Settings

➢ **To restore configuration settings that you backed up:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Select **ADVANCED > Administration > Backup Settings**.

   The Backup Settings screen displays.

5. Click the **Browse** button to find and select the `.cfg` file.
6. Click the **Restore** button.

   The file is uploaded to the router and the router reboots.

WARNING:

Do not interrupt the reboot process.

Erase the Current Configuration Settings

You can erase the current configuration and restore the factory default settings. You might want to do this if you move the router to a different network. (For more information, see *Factory Settings* on page 111.)

➢ **To erase the configuration settings:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Administration > Backup Settings**.

   The Backup Settings screen displays.
5. Click the **Erase** button.
6. Click the **Yes** button to confirm.

The factory default settings are restored. The user name is admin, the password is password, and the LAN IP address is 192.168.1.1. DHCP is enabled.

Change the admin Password

You can the default password that is used to log in to the router with the user name admin. If you change this password, NETGEAR recommends that you enable password recovery. Password recovery allows you to recover a forgotten password.

Note: This password is not the one that you use for WiFi access. The label on your router shows your unique wireless network name (SSID) and password for wireless access.

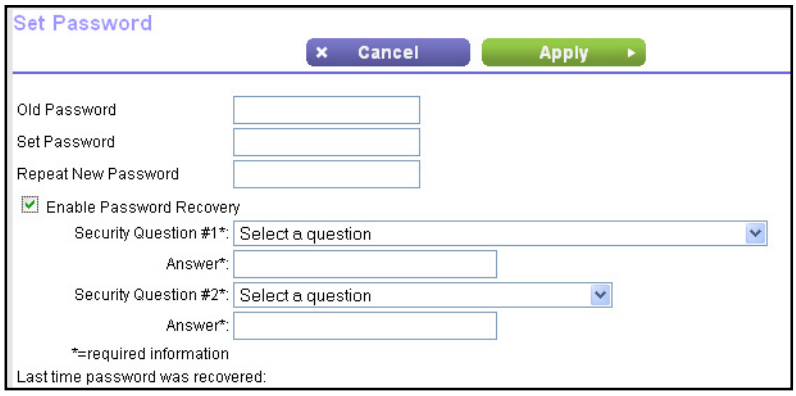
➢ **To set the password for the user name admin:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Administration > Set Password**.



5. Type the old password.
6. Type the new password in the **Set Password** field.
7. Type the new password in the **Repeat New Password** field.
8. To enable password recovery, select the **Enable Password Recovery** check box.

   The screen adjusts.

   a. Select two security questions.
   b. In the **Answer** fields, type the answers to the selected questions.
9. Click the **Apply** button.

   Your settings are saved.

Remote Management

The remote management feature lets you access your router over the Internet to view or change its settings. You need to know the router's WAN IP address to use this feature.

Note: Be sure to change the password for the user name admin to a secure password. The ideal password contains no dictionary words from any language and contains uppercase and lowercase letters, numbers, and symbols. It can be up to 30 characters.

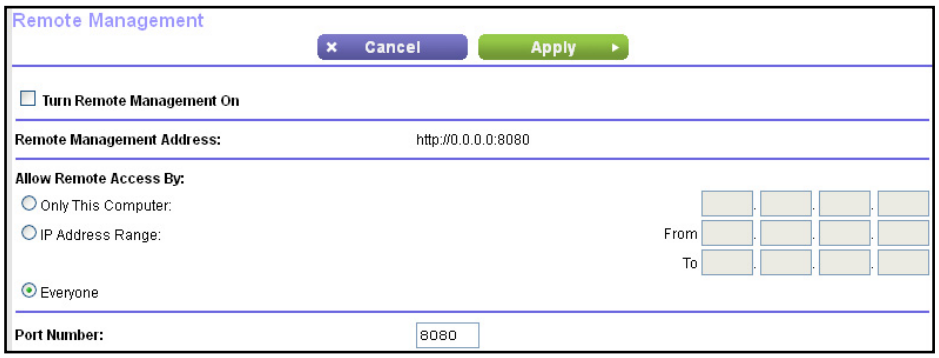
➢ **To set up remote management:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > Remote Management**.



5. Select the **Turn Remote Management On** check box.
6. In the Allow Remote Access By section, specify the external IP addresses to be allowed to access the router's remote management.

   Note: For enhanced security, restrict access to as few external IP addresses as practical.

   Select a radio button:

   - **Only This Computer**. Allow access from a single IP address on the Internet. Enter the IP address to be allowed access.
   - **IP Address Range**. Allow access from a range of IP addresses on the Internet. Enter a beginning and ending IP address to define the allowed range.
   - **Everyone**. Allow access from any IP address on the Internet.

7. Specify the port number for accessing the web management interface.

   Normal web browser access uses the standard HTTP service port 80. For greater security, enter a custom port number for the remote web management interface. Choose a number from 1024 to 65535, but do not use the number of any common service port. The default is 8080, which is a common alternate for HTTP.

8. Click the **Apply** button.

   Your changes are saved.

- **To use remote access:**

1. Launch a web browser on a computer that is not on your home network.
2. Type your router's WAN IP address into your browser's address or location field followed by a colon (:) and the custom port number.

   For example, if your external address is 134.177.0.123 and you use port number 8080, enter **http://134.177.0.123:8080** in your browser.

Specify Internet Port Settings

8

You can use port forwarding and port triggering to set up rules for Internet traffic. You need networking knowledge to set up these features.

This chapter includes the following sections:

- *Set Up Port Forwarding to a Local Server*
- *Set Up Port Triggering*

Set Up Port Forwarding to a Local Server

If you have a server in your home network, you can allow certain types of incoming traffic to reach the server. For example, you might want to make a local web server, FTP server, or game server visible and available to the Internet.

The router can forward incoming traffic with specific protocols to computers on your local network. You can specify the servers for applications and you can also specify a default DMZ server to which the router forwards all other incoming protocols.

➢ **To forward specific incoming protocols:**

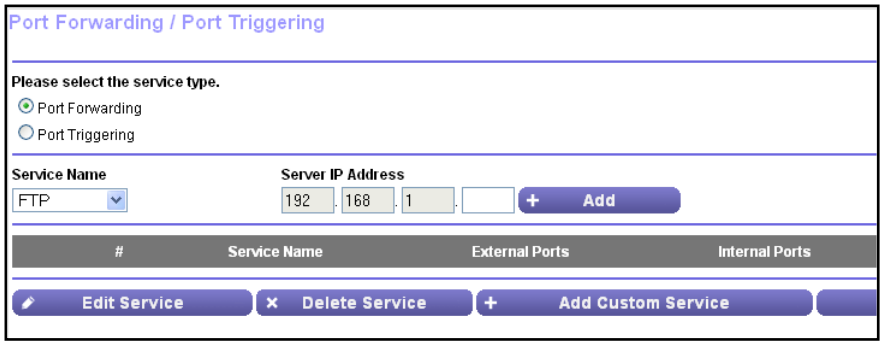
1. Decide which type of service, application, or game you want to provide.
2. Find the local IP address of the computer on your network that will provide the service.

   The server computer must always have the same IP address. To specify this setting, use the reserved IP address feature. See *Reserve LAN IP Addresses* on page 60.
3. Launch a web browser from a computer or wireless device that is connected to the network.
4. Type **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
5. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
6. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.



7. Leave the **Port Forwarding** radio button selected as the service type.
8. In the **Service Name** list, select the service name.

   If the service that you want to add is not in the list, create a custom service. See *Add a Custom Port Forwarding Service* on page 92.
9. In the **Server IP Address** field, enter the IP address of the computer that will provide the service.
10. Click the **Add** button.

The service displays in the list.

Add a Custom Port Forwarding Service

➢ **To add a custom service:**

1. Find out which port number or range of numbers the service or application uses.

   You can usually find this information by contacting the publisher of the application or user groups or news groups.

2. Launch a web browser from a computer or wireless device that is connected to the network.
3. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

4. Enter the router user name and password.

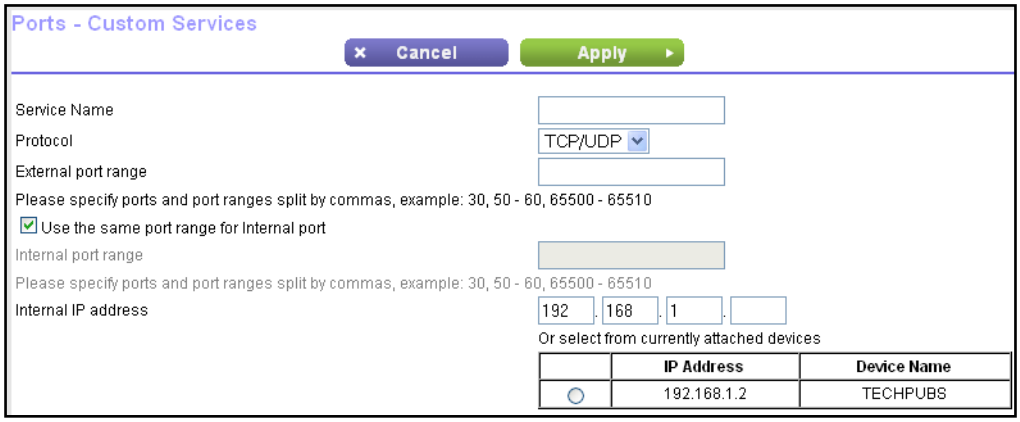
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

5. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.

   The Port Forwarding/Port Triggering screen displays.

6. Leave the **Port Forwarding** radio button selected as the service type.
7. Click the **Add Custom Service** button.



8. In the **Service Name** field, enter a descriptive name.
9. In the **Protocol** field, select the protocol. If you are unsure, select **TCP/UDP**.
10. In the **External port range** field, enter the port numbers.
11. Use one of the following methods to specify the internal port numbers:
    - Leave **Use the same port range for internal port** check box selected.
    - Type the port numbers in the **Internal port range** field.

12. Type the IP address in the **Internal IP address** field or select the radio button for an attached device listed in the table.
13. Click the **Apply** button.

    The service is now in the list on the Port Forwarding/Port Triggering screen.

Edit a Port Forwarding Service

➢ **To edit a port forwarding entry:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.

   The Port Forwarding/Port Triggering screen displays.
5. Leave the **Port Forwarding** radio button selected as the service type.
6. In the table, select the radio button next to the service name.
7. Click the **Edit Service** button.

   The Ports - Custom Services screen displays.
8. Specify changes as needed.
9. Click the **Apply** button.

   Your changes are saved.

Delete a Port Forwarding Entry

➢ **To delete a port forwarding entry:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The BASIC Home screen displays.

4. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.
5. Leave the **Port Forwarding** radio button selected the service type.
6. In the table, select the radio button next to the service name.
7. Click the **Delete Service** button.

Application Example: Make a Local Web Server Public

If you host a web server on your local network, you can use port forwarding to allow web requests from anyone on the Internet to reach your web server.

➢ **To make a local web server public:**

1. Assign your web server either a fixed IP address or a dynamic IP address using DHCP address reservation.

   In this example, your router always gives your web server an IP address of 192.168.0.33.

2. In the Port Forwarding/Port Triggering screen, configure the router to forward the HTTP service to the local address of your web server at **192.168.0.33**.

   HTTP (port 80) is the standard protocol for web servers.

3. (Optional) Register a host name with a Dynamic DNS service, and specify that name in the Dynamic DNS screen of the router.

   For more information, see *Dynamic DNS* on page 73.

   Dynamic DNS makes it much easier to access a server from the Internet because you can type the name in the Internet browser. Otherwise, you must know the IP address that the Internet provider assigned, which typically changes.

How the Router Implements the Port Forwarding Rule

The following sequence shows the effects of a port forwarding rule:

1. When you type the URL www.example.com in your browser, the browser sends a web page request message with the following destination information:
   - **Destination address**. The IP address of www.example.com, which is the address of your router.
   - **Destination port number**. 80, which is the standard port number for a web server process.
2. Your router receives the message and finds your port forwarding rule for incoming port 80 traffic.
3. The router changes the destination in the message to IP address 192.168.1.123 and sends the message to that computer.

4. Your web server at IP address 192.168.1.123 receives the request and sends a reply message to your router.
5. Your router performs Network Address Translation (NAT) on the source IP address, and sends the reply through the Internet to the computer or wireless device that sent the web page request.

Set Up Port Triggering

Port triggering is a dynamic extension of port forwarding that is useful in these cases:

- An application uses port forwarding to more than one local computer (but not simultaneously).
- An application opens incoming ports that are different from the outgoing port.

With port triggering, the router monitors traffic to the Internet from an outbound “trigger” port that you specify. For outbound traffic from that port, the router saves the IP address of the computer that sent the traffic. The router temporarily opens the incoming port or ports that you specify in your rule, and forwards that incoming traffic to that destination.

Port forwarding creates a static mapping of a port number or range of ports to a single local computer. Port triggering can dynamically open ports to any computer when needed and close the ports when they are no longer needed.

Note: If you enabled port triggering because you use applications such as multiplayer gaming, peer-to-peer connections, real-time communications such as instant messaging, or remote assistance (a feature in Windows XP), enable Universal Plug and Play (UPnP). See *Improve Network Connections with Universal Plug and Play* on page 41.

Add a Port Triggering Service

➢ **To add a port triggering service:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

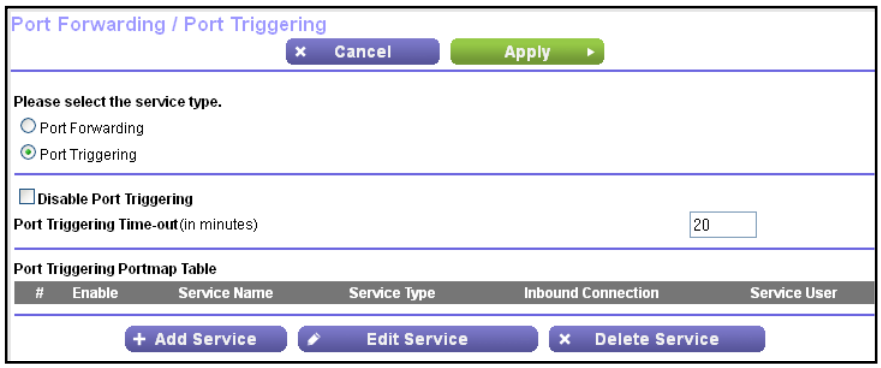
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

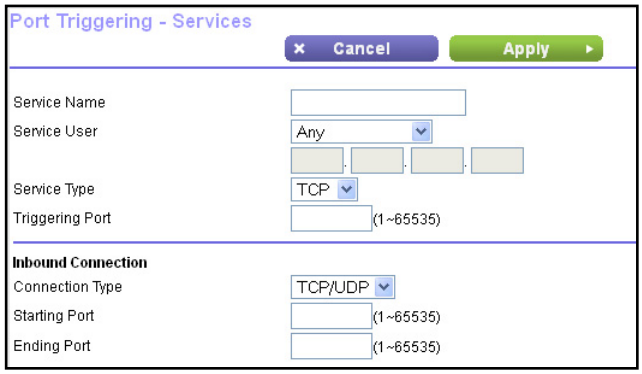
4. Select **ADVANCED > Advanced Setup > Port Forwarding/Port Triggering**.

   The Port Forwarding/Port Triggering screen displays.

5. Select the **Port Triggering** radio button.



6. Click the **Add Service** button.



7. In the **Service Name** field, type a descriptive service name.
8. From the **Service User** list, select a user option:
   - **Any** (the default) allows any computer on the Internet to use this service.
   - **Single address** restricts the service to a particular computer. You must enter the IP address of the computer to which you want to grant access.
9. From the **Service Type** list, select a service.

   If you are not sure, select **TCP/UDP**.

10. In the **Triggering Port** field, enter the number of the outbound traffic port that will open the inbound ports.
11. In the **Connection Type**, **Starting Port**, and **Ending Port** fields, enter the inbound connection port information.
12. Click the **Apply** button.

    The service is added. You must enable port triggering before the router uses port triggering.

Application Example: Port Triggering for Internet Relay Chat

Some application servers, such as FTP and IRC servers, send replies to multiple port numbers. Using port triggering, you can tell the router to open more incoming ports when a particular outgoing port starts a session.

An example is Internet Relay Chat (IRC). Your computer connects to an IRC server at destination port 6667. The IRC server not only responds to your originating source port but also sends an “identify” message to your computer on port 113. Using port triggering, you can tell the router, “When you initiate a session with destination port 6667, you must also allow incoming traffic on port 113 to reach the originating computer.” The following sequence shows the effects of this port triggering rule:

1. You open an IRC client program to start a chat session on your computer.
2. Your IRC client composes a request message to an IRC server using a destination port number of 6667, the standard port number for an IRC server process. Your computer then sends this request message to your router.
3. Your router creates an entry in its internal session table describing this communication session between your computer and the IRC server. Your router stores the original information, performs Network Address Translation (NAT) on the source address and port, and sends this request message through the Internet to the IRC server.
4. Noting your port triggering rule and observing the destination port number of 6667, your router creates another session entry to send any incoming port 113 traffic to your computer.
5. The IRC server sends a return message to your router using the NAT-assigned source port (for example, port 33333) as the destination port and sends an “identify” message to your router with destination port 113.
6. When your router receives the incoming message to destination port 33333, it checks its session table to see if a session is active for port number 33333. Finding an active session, the router restores the original address information replaced by NAT and sends this reply message to your computer.
7. When your router receives the incoming message to destination port 113, it checks its session table and finds an active session for port 113 associated with your computer. The router replaces the message’s destination IP address with your computer’s IP address and forwards the message to your computer.
8. When you finish your chat session, your router eventually senses a period of inactivity in the communications and removes the session information from its session table, and incoming traffic is no longer accepted on port numbers 33333 or 113.

Troubleshooting

9

This chapter provides information to help you diagnose and solve problems you might have with your router. If you do not find the solution here, visit the NETGEAR support site at *http://support.netgear.com* for product and contact information.

This chapter contains the following sections:

- *Forgotten Passwords*
- *WiFi Connections*
- *Changes Not Saved*
- *Troubleshoot with the LEDs*
- *Cannot Log In to the Router*
- *The Router Cannot Access the Internet*
- *Troubleshoot Your Network Using the Ping Utility*
- *Troubleshoot IP Addresses*

Forgotten Passwords

The router user name admin lets you use a web browser to log in to the router to view or change its settings. The router's WiFi network name lets you connect to its WiFi network. Both admin and the WiFi network have passwords by default, which are on labels on the bottom of the router.

admin Password

The default password for the router user name admin is **password**. If you changed it and enabled password recovery, you can recover the password.

If you changed the password and did not enable password recovery, you can use the **Reset** button to return the router to its factory settings. This erases all the router's current settings including its Internet connection settings. For more information, see *Factory Settings* on page 111.

➢ **To recover your password when password recovery is enabled:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of your browser, type **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Click the **Cancel** button.

   If password recovery is enabled, you are prompted to enter the serial number of the router.

   The serial number is on a label on the bottom of the router.
4. Enter the serial number of the router.
5. Click the **Continue** button.

   A screen displays requesting the answers to your security questions.
6. Enter the saved answers to your security questions.
7. Click the **Continue** button.

   A screen displays your recovered password.
8. Click the **Login again** button.

   A login screen displays.
9. With your recovered password, log in to the router.

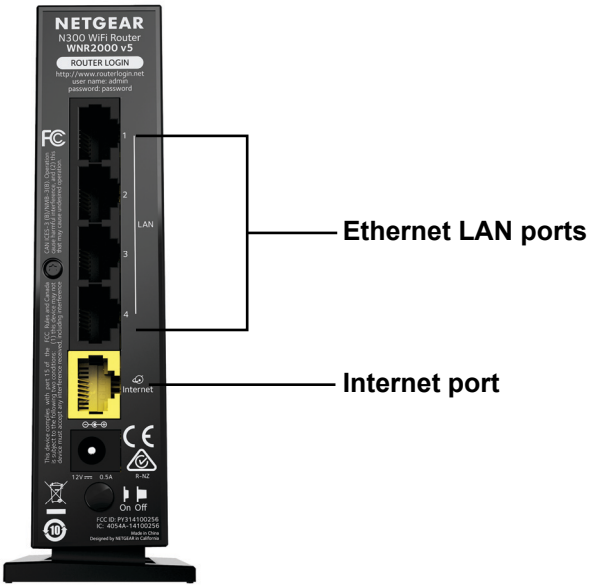
WiFi Passwords

The router comes preset with a unique WiFi network name and WiFi password. This information is on a label on the bottom of the router. You can also set up a guest network to allow visitors to access your Internet connection.

If you changed the WiFi settings and do not remember what they are, you can use a wired Ethernet connection to log in to the router to view the WiFi settings.

➢ **To use a wired connection to view WiFi settings:**

1. Use an Ethernet cable to connect your computer to a numbered Ethernet LAN port on the router.



   Do not connect this Ethernet cable to the yellow Internet port on the router.

2. Launch a web browser from the connected computer.
3. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.

4. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

5. To view the WiFi settings, select **Wireless**.

   The Wireless Network screen displays.

6. To view guest network settings, select **Guest**.

   The Guest Network Settings screen displays.

WiFi Connections

If you are having trouble connecting wirelessly to the router, try to isolate the problem, which might be one of the following:

- The WiFi signal strength is weak.

  Check these conditions:

  - Is your router too far from your computer, or too close? Move your computer near the router, but at least 6 feet (2 meters) away, and see if the signal strength improves.
  - Is your WiFi signal blocked by objects between the router and your computer?
- Your computer or wireless devices does not find your WiFi network.

  Check the following:

  - Is the WiFi LED on the router lit?

    If this LED is off, it is possible that someone disabled the wireless radio or set up a wireless schedule. For more information about these settings, see *Control the Wireless Radio* on page 70.
  - Did you disable the router's SSID broadcast?

    If you cleared the **Enable SSID Broadcast** check box in the Wireless Network screen, your wireless network is hidden and does not display in your wireless client's scanning list. To connect to a hidden network, you must type the network name and the WiFi password. For more information about the SSID broadcast, see *Specify Basic WiFi Settings* on page 63.
  - Does your computer or wireless device support the security that you are using for your WiFi network (WEP, WPA, or WPA2)?

    For information about wireless security settings, see *Specify Basic WiFi Settings* on page 63.

Changes Not Saved

If the router does not save the changes you make through the NETGEAR genie screens, do the following:

- When you log in to the router and change the settings on a screen, always click the **Apply** button before you move to another screen or tab, or your changes are lost.
- Click the **Refresh** or **Reload** button in the web browser. It is possible that the changes might have occurred, but the old settings are in the web browser's cache.

Troubleshoot with the LEDs

The LEDs on the front panel of the router indicate its status.

Apply Power to the Router and Check the LEDs

➢ **To apply power to the router and check the LEDs:**

1. Connect the power adapter cord that came with the router and plug it in to a power outlet.

   The Power LED lights and turns amber within a few seconds. This indicates that the self-test is running.

2. After approximately 30 seconds, verify that the LEDS are lit as follows:
   - The Power LED is lit solid green.
   - The WiFi LED is lit solid green.
   - The Internet LED is lit solid green.
3. If the LEDs do not light as expected, use the LED behavior to troubleshoot the problem.

All LEDs Remain Lit

When the router is turned on, the LEDs light for about 10 seconds and then turn off. If all the LEDs stay lit, a fault exists within the router.

If all LEDs are still lit one minute after power-up, try the following:

- Unplug the router's power adapter cord. Plug it in again and see if the router recovers.
- To return the router to its factory settings, press and hold the **Reset** button.

  For more information, see *Factory Settings* on page 111.

If the error persists, you might have a hardware problem. Contact technical support at *www.netgear.com/support*.

Power LED Is Off or Blinking

If the Power LED is off or blinking, try the following:

- Make sure that the power adapter cord is securely connected to your router and securely connected to a functioning power outlet.
- Make sure that you are using the power adapter cord that NETGEAR supplied for this product.

  If the Power LED blinks slowly and continuously, the router firmware is corrupted. This can happen if a firmware upgrade is interrupted or if the router detects a problem with the firmware. If the error persists, you have a hardware problem. For recovery instructions or help with a hardware problem, contact technical support at *www.netgear.com/support*.

Power LED Stays Amber

When the router is turned on, the Power LED turns amber for about 20 seconds and then turns green. If the LED does not turn green, the router has a problem.

If the Power LED is still amber one minute after you turn on power to the router, try the following:

- Unplug the router's power adapter cord. Plug it in again and see if the router recovers.
- To return the router to its factory settings, press and hold the **Reset** button.

  For more information, see *Factory Settings* on page 111.

If the error persists, you might have a hardware problem. Contact technical support at *www.netgear.com/support*.

Internet LEDs Is Off

If the Internet LED does not light, check the following:

- Make sure that the Ethernet cable is securely connected to the router Internet port and the modem.
- Make sure that power is turned on to the connected modem.
- Be sure that you are using the correct cable.

  When you connect the router's Internet port to a cable or DSL broadband modem, use the cable that was supplied with the cable or DSL broadband modem. This cable can be a standard straight-through Ethernet cable or an Ethernet crossover cable.

WiFi LED Is Off

If the WiFi LED stays off, check to see if someone disabled the wireless radio or set up a wireless schedule. For more information about these settings, see *Control the Wireless Radio* on page 70. The WiFi LED is lit when the wireless radio is turned on.

Cannot Log In to the Router

If you cannot log in to the router from a computer or wireless device on your local network, check the following:

1. Make sure that your computer or wireless device is connected to the router's network.
   - For a WiFi connection, select the network and entered its WiFi password.
   - For a wired connection, use an Ethernet cable to connect your computer to an Ethernet LAN port on the router (not the Internet port).
2. Launch a web browser from a computer or wireless device that is connected to the network.
3. In the address field of your browser, type **www.routerlogin.net** or **www.routerlogin.com**.
4. If a login prompt does not display, try the following:

- Close the browser and launch it again.
- Make sure that your browser has Java, JavaScript, or ActiveX enabled. If you are using Internet Explorer, click the **Refresh** button to be sure that the Java applet is loaded.
- If you are using a wired connection, check the Ethernet connection between the computer and the router.

5. If the login prompt displays, but you cannot log in, try the following:
   - Make sure that you are using the correct login information.

     The user name is **admin** and the default password is **password**. Make sure that Caps Lock is off when you enter this information.
   - If you customized the IP address scheme that the router uses, see *Troubleshoot IP Addresses* on page 108.

The Router Cannot Access the Internet

If you can log in to your router, but it cannot access the Internet, see if the router can obtain an IP address from your Internet provider. Unless your Internet provider assigned you a fixed IP address, your router requests an IP address from the Internet service. You can see if the request was successful using the Router Status screen.

Note: The Setup Wizard can detect your Internet connection during installation, but if the router cannot get a WAN IP address, the Setup Wizard cannot automatically resolve this issue.

If you are attempting to set up your NETGEAR router as a replacement for an ADSL gateway in your network, the router cannot perform many gateway services. For example, the router cannot convert ADSL or cable data into Ethernet networking information. NETGEAR does not support such a configuration.

➢ **To check the WAN IP address:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.

4. Click the **ADVANCED** tab.

   The Router Status screen displays.

5. In the Internet Port pane, check that an IP address is shown for the Internet port.

   If 0.0.0.0 is shown, your router did not obtain an IP address from your ISP.

   For more information about the Internet Port pane, see *View Internet Port Information* on page 76.

6. If your router cannot obtain an IP address from the ISP, try to force your cable or DSL broadband modem to recognize your new router by restarting your network in this order:
   a. Unplug *and* turn off the cable or DSL broadband modem.
   b. Unplug the router.
   c. Plug in the cable or DSL broadband modem and turn it on.
   d. Wait two minutes.
   e. Plug in the router and wait two minutes.

If your router is still unable to obtain an IP address from the ISP, the problem might be one of the following:

- Your Internet service provider (ISP) might require a login program.

  Ask your ISP if it requires PPP over Ethernet (PPPoE) or some other type of login. If your ISP requires a login, the login name and password might be set incorrectly.

- Your ISP might check for your computer's host name.
  Assign the computer host name of your ISP account as the account name in the Internet Setup screen.
- If your ISP allows only one Ethernet MAC address to connect to Internet and checks for your computer's MAC address, do one of the following:
  - Inform your ISP that you bought a new network device and ask them to use the router's MAC address.
  - Configure your router to clone your computer's MAC address.

Troubleshoot Internet Browsing

If your router can obtain an IP address but your computer is unable to load any web pages from the Internet, it might be for any of the following reasons:

- Your computer might not recognize any DNS server addresses.

  A DNS server is a host on the Internet that translates Internet names (such as www addresses) to numeric IP addresses. Typically, your ISP provides the addresses of one or two DNS servers for your use. If you entered a DNS address during the router's configuration, reboot your computer and verify the DNS address. You can configure your computer manually with DNS addresses, as explained in your operating system documentation.

- Your computer might not have the router configured as its TCP/IP gateway.

If your computer obtains its information from the router by DHCP, reboot the computer and verify the gateway address.

- You might be running login software that is no longer needed.

  If your ISP provided a program to log you in to the Internet (such as WinPoET), you no longer need to run that software after installing your router. If you use Internet Explorer as your browser, you might need to select **Tools > Internet Options**, click the **Connections** tab, and select the **Never dial a connection** check box. Other browsers have similar options.

Troubleshoot a PPPoE Internet Connection

➢ **To troubleshoot a PPPoE Internet connection:**

1. Launch a web browser from a computer or wireless device that is connected to the network.
2. In the address field of the web browser, enter **www.routerlogin.net** or **www.routerlogin.com**.

   A login screen displays.
3. Enter the router user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home screen displays.
4. Click the **ADVANCED** tab.

   The Router Status screen displays.
5. On the Internet Port pane, click the **Connection Status** button.

   For more information, see *Check the Internet Connection Status* on page 78. If the fields show valid information, including valid IP addresses, your PPPoE connection is up and working.

   If any of the fields show incomplete information or no valid IP address, you can attempt to reconnect by clicking the **Connect** button. The router continues to attempt to connect indefinitely.

If you cannot connect after several minutes, you might be using an incorrect service name, user name, or password. There might also be a provisioning problem with your ISP.

Note: Unless you connect manually, the router does not authenticate using PPPoE until data is transmitted to the network.

Troubleshoot Your Network Using the Ping Utility

Most network devices and routers contain a ping utility that sends an echo request packet to the designated device. The device then responds with an echo reply. You can troubleshoot a network by using the ping utility on your computer or workstation.

Test the LAN Path to Your Router

You can ping the router from your computer to verify that the LAN path to your router is set up correctly.

➢ **To ping the router from a computer running Windows:**

1. From the Windows toolbar, click the **Start** button and select **Run**.
2. In the field provided, type **ping** followed by the IP address of the router, as in this example:

   ping www.routerlogin.net
3. Click the **OK** button.

   You see a message like this one:

   ```
   Pinging <IP address > with 32 bytes of data
   ```

   If the path is working, you see this message:

   ```
   Reply from < IP address >: bytes=32 time=NN ms TTL=xxx
   ```

   If the path is not working, you see this message:

   ```
   Request timed out
   ```

If the path is not functioning correctly, you might have one of the following problems:

- Wrong physical connections

  Check that the appropriate LEDs are on for your network devices. If your router and computer are connected to a separate Ethernet switch, make sure that the link LEDs are lit for the switch ports that are connected to your computer and router.
- Wrong network configuration

  Verify that the Ethernet card driver software and TCP/IP software are both installed and configured on your computer.

  Verify that the IP address for your router and your computer are correct and that the addresses are on the same subnet.

Test the Path from Your Computer to a Remote Device

After verifying that the LAN path works correctly, test the path from your computer to a remote device.

1. From the Windows toolbar, click the **Start** button and select **Run**.

2. In the field provided, type

   ping -n 10 <*IP address*>

   where <*IP address*> is the IP address of a remote device such as your ISP DNS server.

If the path is functioning correctly, replies like those examples shown in *Test the LAN Path to Your Router* on page 107 are displayed.

If you do not receive replies, try the following:

- Check that your computer has the IP address of your router listed as the default gateway. If a DHCP server assigns the IP configuration of your computer, this information is not visible on your computer's Network Control Panel. Verify that the IP address of the router is listed as the default gateway.
- Check to see that the network address of your computer (the portion of the IP address specified by the subnet mask) is different from the network address of the remote device.
- Check that your cable or DSL broadband modem is connected and functioning.
- If your ISP assigned a host name to your computer, enter that host name as the account name in the Internet Setup screen.
- Your ISP might be rejecting the Ethernet MAC addresses of all but one of your computers.

Many broadband ISPs restrict access by allowing traffic only from the MAC address of your broadband modem, but some ISPs additionally restrict access to the MAC address of a single computer connected to that modem. If this is the case, configure your router to clone or spoof the MAC address from the authorized computer.

Troubleshoot IP Addresses

By default, the router is set up to automatically assign IP addresses to network clients. The router's IP address is 192.168.1.1 unless you changed it. Wired and wirelessly connected computers must have network IP addresses on the same network as the router. The simplest way to meet this requirement is to configure each computer to obtain an IP address automatically using DHCP.

If you customized the IP address settings of your router and you're having trouble with network connections, check the following:

- Make sure that your computer's IP address is on the same subnet as the router. If you are using the recommended addressing scheme, your computer's address is in the range of 192.168.1.2 to 192.168.1.254.

  If your computer's IP address is shown as 169.254.x.x, recent versions of Windows and Mac OS generate and assign an IP address if the computer cannot reach a DHCP server. These autogenerated addresses are in the range of 169.254.x.x. If your IP address is in this range, check the connection from the computer to the router, and reboot your computer.

- If your router's IP address was changed and you do not know the current IP address, clear the router's configuration to factory defaults. This sets the router's IP address to 192.168.1.1. This procedure is explained in *Factory Settings* on page 111.

Supplemental Information

A

This appendix includes the following sections.

- *Factory Settings*
- *Technical Specifications*

Factory Settings

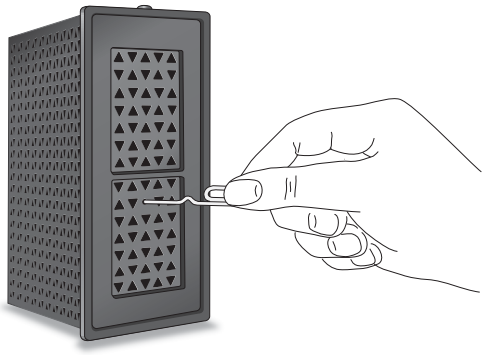
You can return the router to its factory default settings.

➢ **To restore the factory default settings:**

1. Locate the round hole in the bottom of the router.

   The **Reset** button is inside of this hole.

2. Use a paperclip or sharp object to press and hold the **Reset** button for at least seven seconds.



The router resets and returns to the factory configuration settings shown in the following table.

Table 3. Router factory default settings

Feature		Default Behavior
Router login	User login URL	www.routerlogin.net
	User name (case-sensitive)	admin
	Login password (case-sensitive)	password
Internet connection	WAN MAC address	Use default hardware address
	WAN MTU size	1500
	Port speed	AutoSensing

Table 3. Router factory default settings (continued)

Feature		Default Behavior
Local area network (LAN)	LAN IP	192.168.1.1
	Subnet mask	255.255.255.0
	DHCP server	Enabled
	DHCP range	192.168.1.2 to 192.168.1.254
	Time zone	United States is Pacific Time; otherwise, varies by region
	Time zone adjusted for daylight saving time	Disabled
Wireless	Wireless communication	Enabled
	SSID name	Preset. For information, see the label on the bottom of the router.
	Network key (password)	
	Broadcast SSID	Enabled
	Transmission speed	Auto **Note:** Maximum wireless signal rate derived from IEEE Standard 802.11 specifications. Actual throughput varies. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead lower actual data throughput rate.
	Country/region	United States in the US; otherwise, varies by region
	RF channel	Auto
	Operating mode	Up to 300 Mbps
	20/40 MHz coexistence	Enabled
	Data rate	Best
	Output power	Full

Technical Specifications

Table 4. Router specifications

Feature	Description
Data and routing protocols	TCP/IP, RIP-1, RIP-2, DHCP, PPPoE, PPTP, Bigpond, Dynamic DNS, UPnP, and SMB
Power adapter	• North America: 120V, 60 Hz, input • UK, Australia: 240V, 50 Hz, input • Europe: 230V, 50 Hz, input • All regions (output): 12 VDC @ 0.5A, output
Dimensions	48 mm x 132.5 mm x 108 mm (1.89 in. x 5.22 in. x 4.28 in.)
Weight	163 g (5.75 oz)
Operating temperature	0° to 40°C (32º to 104ºF)
Operating humidity	90% maximum relative humidity, noncondensing
Electromagnetic emissions	FCC Part 15 Class B VCCI Class B EN 55 022 (CISPR 22), Class B C-Tick N10947
LAN	10BASE-T or 100BASE-Tx, RJ-45
WAN	10BASE-T or 100BASE-Tx, RJ-45
Wireless	Maximum wireless signal rate complies with the IEEE 802.11 standard. See the entry for Transmission speed in *Table 3* on page 111.
Radio data rates	Auto Rate Sensing
Data encoding standards	IEEE 802.11n version 2.0 IEEE 802.11n, IEEE 802.11g, IEEE 802.11b 2.4 GHz
Maximum computers per wireless network	Limited by the amount of wireless network traffic generated by each node (typically 50–70 nodes)
Operating frequency range	2.412–2.462 GHz (US) 2.412–2.472 GHz (Japan) 2.412–2.472 GHz (Europe ETSI)
802.11 security	WEP, WPA-PSK, WPA2-PSK, WPA-PSK + WPA2-PSK mixed mode, WPA/WPA2 Enterprise